

PE & Sport: BTEC L3 Extended National Certificate Unit 1

Year 12

Half Term 1

Number of Hours	Topic
1	<p>Unit 1 introduction</p> <p>This is a mandatory unit and underpins knowledge throughout the qualification.</p> <p>Learners explore how the skeletal, muscular, cardiovascular and respiratory systems function and the fundamentals of the energy systems.</p> <p>Unit introduction</p> <p>Having an understanding of body systems is imperative in the sports industry so that professionals can help support people who are taking part in sport and exercise. The human body is made up of many different systems that interrelate to allow us to take part in a huge variety of sport and exercise activities. For example, an athlete can go from rest to sprinting in a matter of seconds, whereas an endurance athlete can continue exercising for many hours at a time. In order to appreciate how each of these systems function, you will explore the structure of the skeletal, muscular, cardiovascular, respiratory and energy systems as well as additional factors which affect sport and exercise performance. The anatomy and physiology of each body system and their processes are very different but work together to produce movement. You will gain a full appreciation of how the body is able to take part in sport and exercise through understanding the interrelationships between these body systems. This unit will give you the detailed core knowledge required to progress to coaching and instruction in the sports industry or further study.</p>
1	<p>The effects of exercise and sports performance on the skeletal system</p> <p>A1: Structure of skeletal system:</p> <p>Major bones & types of bones.</p>
1	<p>A1: Structure of skeletal system:</p> <p>Areas of the skeleton, postural deviations & process of bone growth.</p>
1	<p>A2: Function of skeletal system:</p> <p>Functions of the skeleton & functions of different types of bone.</p>

2	A3: Joints: Classification of joints Types of synovial joints
2	A3: Range of movement at synovial joints
1	A4: Responses of the skeletal system to a single sport or exercise session.
1	A5: Adaptations of the skeletal system to exercise: Skeletal adaptations.
1	A6: Additional factors affecting the skeletal system: Skeletal diseases Age.
2	Topics A1-A6 Revision
Reasons behind order of topic in this half term	
<p>The topics follow the order of the exam and replicate the order of the specification i.e. each topic area is separated into a section on the exam paper.</p> <p>Section 1 on the exam contains only questions about the skeletal system.</p> <p>Knowledge of the skeletal system underpins knowledge of the remaining units.</p> <p>Pupils must know the structure and function of the skeleton and bones before they can understand responses, adaptations and additional factors that affect sport performance and exercise capability.</p> <p>Pupils must know the types and structure of joints before they can fully appreciate the movements that they are capable of.</p>	

Half term 2

Number of Hours	Topic
1	<p>The effects of exercise and sports performance on the muscular system</p> <p>B1: Characteristics and function of different types of muscles: Cardiac, Skeletal, Smooth.</p>
1	B2: Major skeletal muscles of the muscular system:

	Major muscles.
1	B3: Antagonistic muscle pairs: Agonist, Antagonist, Synergist, Fixator.
1	B4: Types of skeletal muscle contraction: Isometric, Concentric, Eccentric.
2	B5: Fibre types: Characteristics of type I, type IIa, type IIb (x) Nervous control of muscle contraction.
1	B6: Responses of the muscular system to a single sport or exercise session:
1	B7: Adaptations of the muscular system to exercise: The impact of adaptation of the system on exercise and sports performance.
1	B8: Additional factors affecting the muscular system: Age & Cramp
2	Topics B1-B8 Revision
1	The effects of exercise and sports performance on the respiratory system C1: Structure of the respiratory system
2	C2: Function: Mechanisms of breathing (inspiration and expiration) at rest and during exercise Gas exchange
Reasons behind order of topic in this half term	
This order replicates the order of the exam and the specification. Section 2 of the exam contains only questions about the muscular system.	

Knowledge of the muscular system links very well with knowledge of the skeletal system, it builds on prior knowledge and also creates opportunities for revision/retrieval.

It is important that pupils know the characteristics of the types of muscles before identifying major skeletal muscles.

Pupils are required to be able to identify skeletal muscles to be able to understand antagonistic muscle action.

Learning the types of muscle contraction is assisted by having prior knowledge of antagonistic muscle action.

Learning responses of the muscular system and then adaptations to the muscular system allows pupils to differentiate between immediate responses and long term adaptations. It also provides excellent opportunities for retrieval practice for responses and adaptations of the skeletal system and an opportunity to consider inter-relationships between the two systems which is on the final section of the exam and is essay based.

After completing the muscular system, the SOL moves on to the respiratory system, which is the next section of the exam and also replicates the specification. Section 3 of the exam only contains questions about the respiratory system. Knowing the structure first is imperative in understanding the function.

Half Term 3

Number of hours	Topic
1	C3: Lung volumes:
1	C4: Control of breathing
1	C5: Responses of the respiratory system to a single sport or exercise session
1	C6: Adaptations of the respiratory system to exercise
1	C7: Additional factors affecting the respiratory system: Asthma & effects of altitude/partial pressure on the respiratory system.

2	Topics C1-C7 revision
2	The effects of sport and exercise performance on the cardiovascular system D1: Structure of the cardiovascular system.
1	D2: Function of the cardiovascular system.
1	D3: Nervous control of the cardiac cycle.
1	D4: Responses of the cardiovascular system to a single sport or exercise session.
Reasons behind order of topic in this half term	
<p>Pupils need to know different lung volumes and the nervous control of breathing to be able to understand the responses and adaptations of the respiratory system to exercise. Additional factors which affect the respiratory system is the last topic that is completed for the respiratory system as knowledge of structure, function, responses and adaptations are necessary to be able to understand how asthma and altitude affects the respiratory system. This order also provides excellent opportunities for retrieval practice for responses and adaptations of the previous systems that have been covered.</p> <p>The SOL then moves of to the cardiovascular system. This is a natural progression as there are many factors that interlink the cardiovascular system with the respiratory system and this allows for inter-relationships to be considered, which is on the final section of the exam. This also follows the order or the exam in which the cardiovascular system is the fourth section and only questions about the cardiovascular system are asked here. This is also in line with the specification. Knowing structure and function of the cardiovascular system at the start of this phase is important to be able to understand the nervous control and responses of the cardiovascular system to exercise.</p>	

Half Term 4

Number of hours	Topics
1	D5: Adaptations of the cardiovascular system to exercise

1	D6: Additional factors affecting the cardiovascular system
2	Topics D1–D6 revision
1	Topic E: The effects of exercise and sports performance on the energy systems E1: The role of ATP in exercise:
1	E2: The ATP-PC (alactic) system in exercise and sports performance:
1	E3: The lactate system in exercise and sports performance:
1	E4: The aerobic system in exercise and sports performance:
1	E5: Adaptations of the energy system to exercise:
1	E6: Additional factors affecting the energy systems:
2	Topics E1–E6 revision
Reasons behind order of topic in this half term	
<p>Adaptations of the cardiovascular system and additional factors affecting the cardiovascular system are the last topics to be taught in this area as previous knowledge about structure, function and nervous control underpin understanding here. This order also provides excellent opportunities for retrieval practice for responses and adaptations of the previous systems that have been covered and an opportunity to consider inter-relationships between the respiratory and cardiovascular systems which is on the final section of the exam and is essay based. Energy systems is often deemed to be the most difficult topic and prior knowledge of the muscular, respiratory and cardiovascular systems is necessary to understand how energy systems are used by the body. This also follows the order of the exam in which energy systems is the fifth section and only questions about energy systems are asked here. This is also in line with the specification. Knowing the role of ATP is imperative for understanding energy systems and this allows an overview of the three energy systems that are then focussed on in more detail in subsequent lessons. Adaptations of energy systems and additional factors affecting</p>	

energy systems are the last topics to be covered as previous knowledge of how the energy systems work and what they are used for is necessary to know how they adapt to training. This order also provides excellent opportunities for retrieval practice for adaptations of the previous systems that have been covered and an opportunity to consider inter-relationships between the 5 systems which is on the final section of the exam and is essay based.

Half term 5

Number of hours	Topics
2	Inter-relationships between the body systems UNIT 2: Types of aerobic endurance training methods: continuous training & interval training Purpose of a warm-up (introduction & basics)
4	Reviewing knowledge of responses and adaptations of the body systems to exercise and sport to be applied in extended questions.
	EXAM
Reasons behind order of topic in this half term	
The exam paper has a final section (section F) which is not on the specification. The questions assume that pupils have prior knowledge of training methods and warm-ups, which are Unit 2 topics. This would be that case if these two units were being taught at the same time but due to the learning hours of these units (120 GLH) and being timetabled for 5 hours per week means we compete a small unit (60 GLH) with a large unit per year. In addition, teaching units 1 & 7 simultaneously enables our students to achieve the certificate qualification in year 12 (0.5 A Level). Therefore, unit 2 is a year 13 topic as it is also the synoptic unit. The aims to introduce the basics so that the exam questions in section F can be completed successfully, whilst allowing pupils to apply new knowledge here to unit 2 in year 13. The responses and adaptations are reviewed as the theme of the questions is synoptic and as these are a common theme within all systems. The questions often ask how two or more systems respond or adapt.	

Half term 6

Number of hours	Topics
2	Unit 3: introduction Learners explore the knowledge and skills required for different career pathways in the sports industry. Learners will take part in, and reflect on, a personal skills audit, career action plan and practical interview assessment activities. Unit introduction

	<p>The sports industry is a vast market with many different pathways. For a successful career, you need to understand the scope and breadth of the available opportunities and the steps needed to follow your chosen pathway. In this unit, you will research the different possible careers and the associated job roles in the sports industry, then action plan your development towards achieving a selected career aim. You will analyse your own skills and identify how to develop them into a career through the use of a career plan. You will research your chosen career to understand how to access and progress within it. You will take part in application and interview assessment activities for a selected career pathway, drawing on knowledge and skills from across the qualification to identify your own strengths and gaps in knowledge and skills. You will evaluate your own performance to gain an understanding of the generic employability and specific-technical knowledge and skills required to access and progress in a selected career pathway in the sports industry. This unit will prepare you for progression to a career in the sports industry either directly or through higher education, by developing your understanding of investigation, career planning and awareness of the skills and qualities that sports employers look for in a potential employee.</p>
2	<p>Learning aim B: B Explore own skills using a skills audit to inform a career development action plan</p> <p>B3: Maintaining a personal portfolio/record of achievement and experience: personal portfolio/record of achievement.</p>
2	<p>Learning aim A: Understand the career and job opportunities in the sports industry</p> <p>A1: Scope and provision of the sports industry:</p> <ul style="list-style-type: none"> • size, breadth and geographic spread of the sports industry, locally and nationally • Geographical factors – location, environment, infrastructure, population.
2	<p>A1: Scope and provision of the sports industry:</p> <ul style="list-style-type: none"> • factors that affect sports provision and opportunities: <ul style="list-style-type: none"> ○ socio-economic – wealth, employment, history, culture, fashion & trend. ○ Season – swimming pools, summer camps, sports 7 training camps, competition seasons.
2	<p>A2 Careers and jobs in the sports industry: Key Pathways</p>
2	<p>A2: Careers and jobs in the sports industry:</p> <ul style="list-style-type: none"> • Sectors – public, private, voluntary, third, partnerships. • Local & National employers

2	<p>A2: Careers and jobs in the sports industry:</p> <p>Definitions and types of employment & practical examples across different sports sectors and career pathways, locally & nationally: full-time, part-time, fixed-term contract, self-employment, zero hours contract, apprenticeships.</p>
2	<p>B3: Maintaining a personal portfolio/record of achievement and experience:</p> <p>personal portfolio/record of achievement.</p>
<p>This unit of work starts with an introduction to set the scene on the content and requirements of the course. Learning aim B involves creating a portfolio of evidence which is on-going during the process of this unit so students start this on the earliest opportunity rather than waiting until the assignment is distributed. This portfolio is revisited several times during the guided learning hours of learning aim A & B. Learning aim A & B are used to assess assignment 1 so it is imperative that they are taught in chronological order as the students gather evidence and make progress towards the learning and assessment aims as they progress through the guided learning hours. The order as set out in the specification is followed to enable this.</p>	