

Understanding describing, explaining, analysing and justifying the impact of factors on each body system.

SMSC and British Values

- Understanding the importance and value of ones body and anatomy

Work Related Learning:

Gaining knowledge to assist in a sports coaching/ teaching , sports science career.

Numeracy links:

- Estimating
- Distances
- What are 90 Degree Angles?
- Counting and Addition.

The Examination

The aim of the unit is explore how the skeletal, muscular, cardiovascular and respiratory systems function and the fundamentals of the energy systems.

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

The examination will be one hour and 30 minutes in length.

The number of marks for the examination is 80. The paper will contain a number of short- and long-answer questions that will assess learners' understanding of the following topics: the skeletal system, the muscular system, the respiratory system, the cardiovascular system and the energy system for sports performance. Learners will use this knowledge and understanding to determine the interrelationships between body systems for sports performance.

Command Words:

AO1 Demonstrate knowledge -

Command words: describe, give, identify, name, state.

AO2 Demonstrate understanding -

Command words: describe, explain, give, name, state.

AO3 Analyse –

Command words: analyse, assess.

AO4 Evaluate -

Command words: assess, evaluate.

AO5 Make connections -

Command words: analyse, assess, discuss, evaluate, to what extent.

Key Vocabulary

- **Skeletal** – Bones, Joints, Bone Growth
- **Muscular** – Muscles, Fibre types, Contractions
- **Respiratory** – Volumes, Control of breathing, Gas exchange
- **Cardiovascular** - Heart, Blood Vessels,
- **Energy** – Systems, ATP, Performance
- **Adaptations** – Long term
- **Responses** – Short term
- **Additional factors** – Effecting impacts upon the systems

Wider experiences and opportunities:

- All students will be encouraged to further wider reading on human anatomy
- Experiences within a School / PT / Sport Science industry

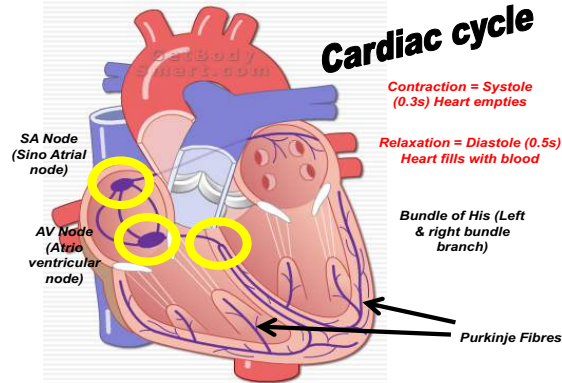
Section A – Skeletal System

- A1** Structure of skeletal system
Understand how the bones of the skeleton are used in sporting techniques and actions.
- A2** Function of skeletal system
- A3** Joints
- A4** Responses of the skeletal system to a single sport or exercise session
- A5** Adaptations of the skeletal system to exercise
- A6** Additional factors affecting the skeletal system

Section B – Muscular System

- B1** Characteristics and functions of different types of muscles
- B2** Major skeletal muscles of the muscular system
- B3** Antagonistic muscle pairs
- B4** Types of skeletal muscle contraction
- B5** Fibre types
- B6** Responses of the muscular system to a single sport or exercise session
- B7** Adaptations of the muscular system to exercise
- B8** Additional factors affecting the muscular system

The Components

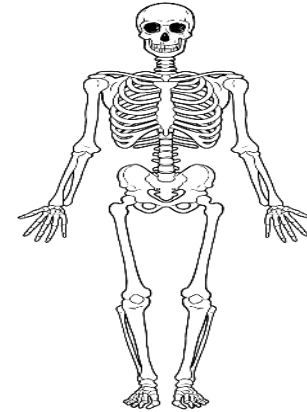
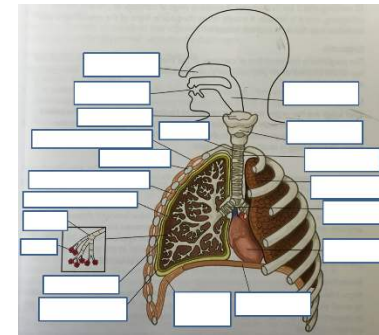


Section C – Respiratory System

- C1** Structure of the respiratory system
- C2** Function
Understand the function of the respiratory system in response to exercise and sports performance.
- C3** Lung volumes
Understand the lung volumes and the changes that occur in response to exercise and sports performance.
- C4** Control of breathing
Understand how breathing rate is controlled in response to exercise and sports performance.
- C5** Responses of the respiratory system to a single sport or exercise session
- C6** Adaptations of the respiratory system to exercise
- C7** Additional factors affecting the respiratory system

Section D – Cardiovascular System

- D1** Structure of the cardiovascular system
- D2** Function of the cardiovascular system
- D3** Nervous control of the cardiac cycle
- D4** Responses of the cardiovascular system to a single sport or exercise session
- D5** Adaptations of the cardiovascular system to exercise
- D6** Additional factors affecting the cardiovascular system



Section E – Energy System

- E1** The role of ATP in exercise
- E2** The ATP-PC (alactic) system in exercise and sports performance
- E3** The lactate system in exercise and sports performance
- E4** The aerobic system in exercise and sports performance
- E5** Adaptations of the energy system to exercise
- E6** Additional factors affecting the energy systems