

# Unit 1 - Anatomy and Physiology

**Skeletal** – The bones and joints that the human body is composed of. How do bones grow?

**Muscular** – The muscles that make up the human body. Different types of contraction and the structure of fibres.

**Respiratory** – Lung Volumes. How is breathing controlled? Gaseous exchange.

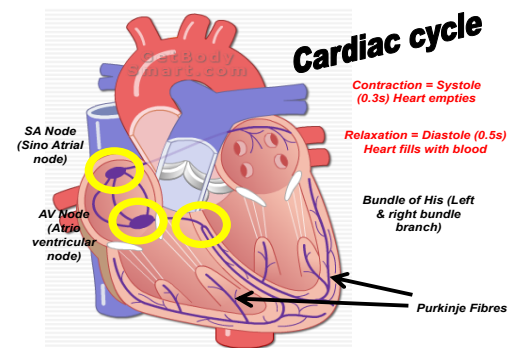
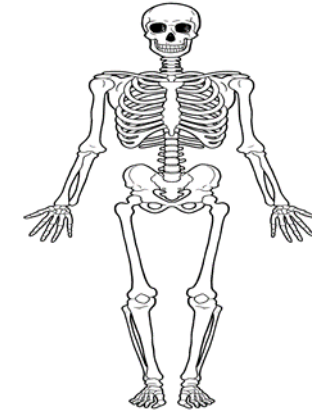
**Cardiovascular** - The structure and function of the heart and blood vessels.

**Energy** – The 3 energy systems. What is ATP? How do we use the energy systems during sports performance?

**Adaptations** – The long-term changes to our body after a sustained period of exercise.

**Responses** – The short-term changes to our body after /during a single exercise session.

**Additional factors** – Situational or individual factors that can impact upon the systems of the body.



## 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.

## Wider experiences and opportunities:

All students will be encouraged towards further wider reading on human anatomy.

Experiences within a school. Personal Training and Sports 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

## 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