



**Waseley  
Sixth**

**A Level PE  
Bridging Course**

AQA

A Level Physical Education



**Section: A**

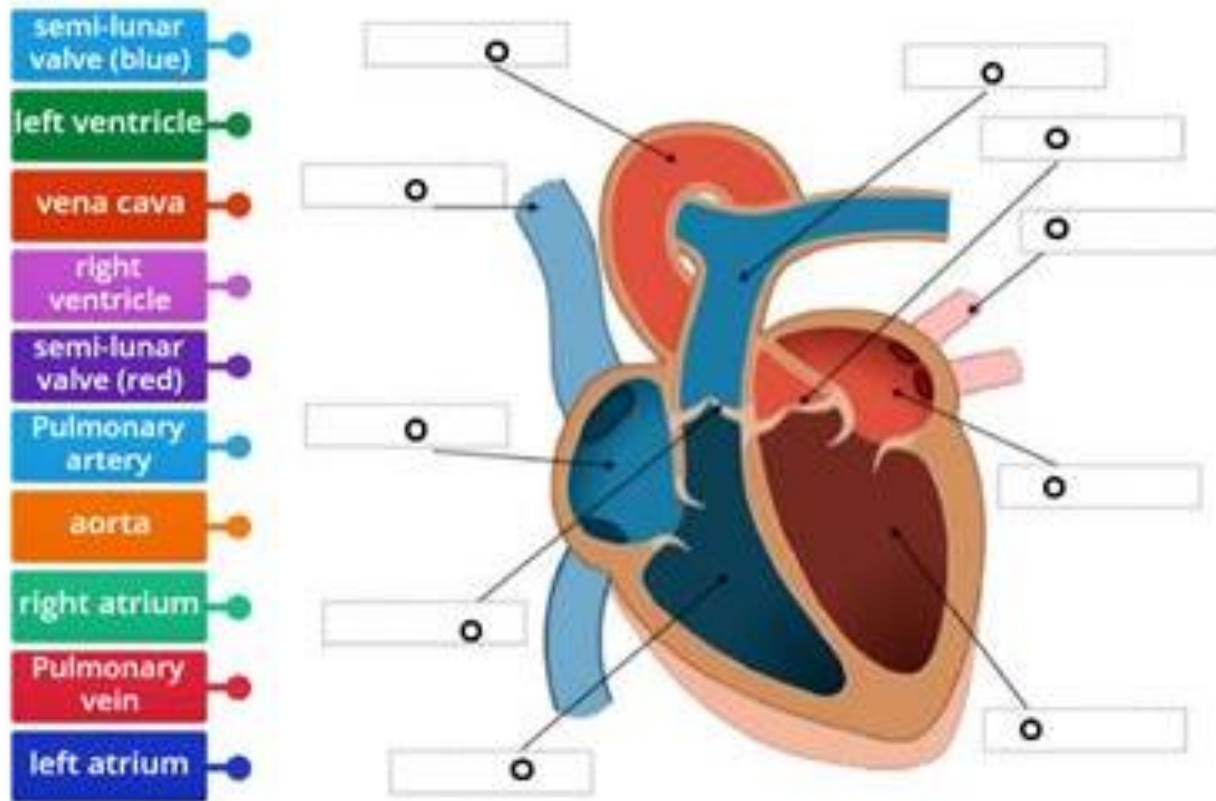
**Applied Anatomy and Physiology**

Name: \_\_\_\_\_

**The Cardiovascular system plays a major role in sport and exercise.**

- ▶ Cardiovascular system is the bodies transport system
- ▶ Heart and blood vessels
- ▶ An efficient system takes blood to working muscles and takes away waste products
- ▶ Transports heat (which is a by-product of exercise) to the skin to assist with cooling down

**Label the heart diagram below**



**Answer the following questions:**

- ▶ FRONT-Describe Atria?

.....

- ▶ FRONT- Describe ventricles

.....

- ▶ Describe the Left side?

.....

- ▶ Role of Vena cava?

.....

- ▶ Role of pulmonary vein?

.....

- ▶ Role of pulmonary artery?

.....

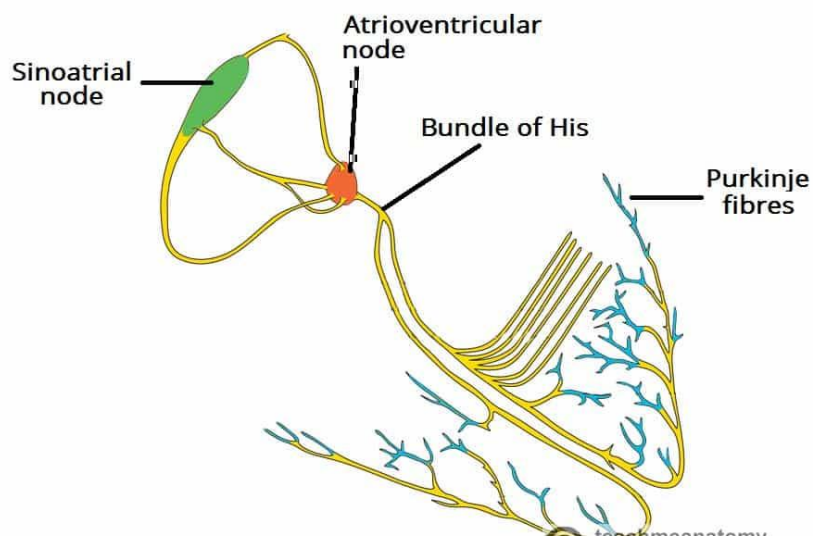
Role of aorta?

.....  
What do the 4 main valves regulate?

- 1
- 2
- 3

**The Cardiac Conduction System**

<https://youtu.be/7EXGD4ms0dU> **watch this video and annotate the key terms**



**Design a flow chart** of how the conduction system operates to create the myogenic operation of the heart?



# The Respiratory System

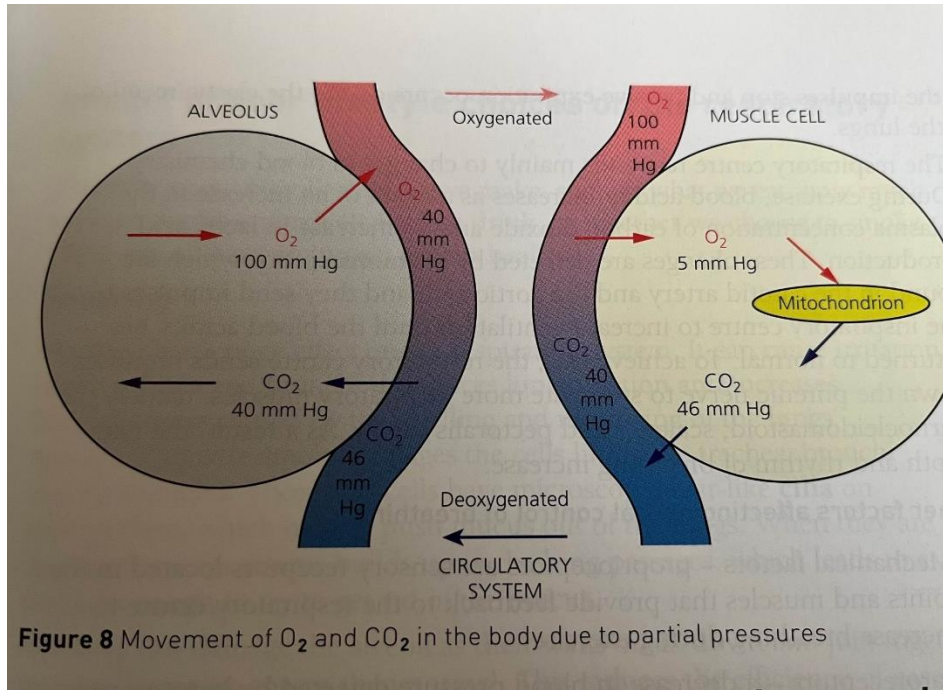
Looking at the diagram below can you explain by going left to right a round what is happening?

1

4

2

3



1.

When we breath in oxygen this is delivered to the alveolus and 100mmHg diffuses into the capillaries where a lower concentration is present at 40mmHG. This is because  $O_2$  moves from high to low. The blood is now fully oxygenated and moves towards the muscle cell.

2. (100mmHg, 025mmHg-why?, Mitochondria-why?)

.....

.....

.....

.....

3 (leaves mitochondria  $CO_2$  46mmHg-why?, Blood 40mmHG, why?)

.....

.....

.....

.....

4 (where is the deoxygenated blood going?)

.....

.....

.....

.....

## The Muscular Skeletal System

Type	Location	Diagram	Lever	Movement	bones	Muscles	Description
1 <sup>st</sup> Class	Elbow			where triceps causes <u>extension</u> of the lower arm			The elbow is the <b>fulcrum</b> . The hand is the <u>resistance</u> . The <b>effort</b> is applied by the triceps muscle to move the resistance in the hand.
1 <sup>st</sup> class	Neck					Splenius capitis-agonist. Brings head up Sternocleidomastoid-agonist-pulls head towards body	
2 <sup>nd</sup> Class	Ankle						
3 <sup>rd</sup> Class	Elbow						
3 <sup>rd</sup> Class	Knee						The effort (Quadricep-agonist Hamstrings- antagonist working to create flexion) lies between fulcrum and load-which is the weight of the lower leg and foot
3 <sup>rd</sup> Class	Hip						The FORCE ARM is short and the RESISTANCE ARM is long. This means there is a MECHANICAL DISADVANTAGE. Because the FORCE ARM is short, the muscles will be unable to apply much force to move. However there is also a MECHANICAL ADVANTAGE as the long RESISTANCE ARM will give a large range of movement and because force is applied so close to the fulcrum it means resistance can be moved quickly.

## Energy Systems

Energy System	Duration and Intensity	How the energy is produced	Advantages	Disadvantages
The ATP-PC system		phosphocreatine (PC) to phosphate (Pi) + creatine + energy		
The <u>anaerobic glycolytic</u> system		<p>Anaerobic glycolysis, takes place in the .....</p> <p>The enzyme glycogen phosphorylase is activated to break down the ..... into glucose-broken further into pyruvic acid by the enzyme phosphofructokinase (PFK).</p> <p>The pyruvic acid is then broken down into ..... by lactate dehydrogenase (LDH) During this system energy is released to allow the re-synthesize of ATP.</p>		

Energy System	Duration and Intensity	How the energy is produced	Advantages	Disadvantages
<b>The aerobic system</b>		<p>There are <b>three</b> key processes involved in the aerobic energy system when using glucose as an energy source:</p> <p><b>Glycolysis:</b> takes place in the.....  ..... Breakdown of glucose to pyruvic acid. 1 glucose =2 ATP. Before it can enter the next stage (Krebs cycle) it is oxidized into 2 acetyl groups and then carried into Krebs cycle by coenzymeA.</p> <p><b>Krebs cycle:</b> The 2 acetyl groups diffuse into .....  They combine with oxaloacetic acid forming citric acid. Hydrogen is removed from the citric acid and the rearranged form of citric acid “oxidative carboxylation” means carbon and hydrogen are given off. The carbon forms.....  .....  The hydrogen is taken to the electron transport chain = 2 ATP</p> <p><b>Electron Transport Chain:</b>..... is carried to the chain by hydrogen carriers. Occurs in the Cristae of the mitochondria splitting the hydrogen into hydrogen ions and electrons charged with potential energy.</p> <p>Hydrogen ions are oxidized to form water and hydrogen electrons provide the energy to re-synthesise ATP. 34 ATP are formed.</p>		

**Fatty acids and proteins as amino acids** can be energy sources in .....conditions. .... is a complex breakdown, but it can provide some energy. Both can enter the Krebs cycle and then then ETC to produce ..... During ..... duration, ..... intensity exercise, fatty acids are the predominant energy source depending on the fitness of the performer.

**Beta Oxidation:** ..... for transport in the blood. Fatty acids undergo..... converting into Acetyl coenzymeA ( Acetyl-CoA )= entry molecule for the Krebs cycle. Fat then follows the glycogen metabolism. More ATP is made from fatty acids than glucose. So utilised in long duration low-intensity exercise.

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# A Level Physical Education



## Section: **B**

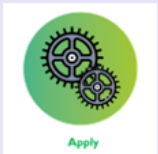
### Psychology and Skill Acquisition

Name: \_\_\_\_\_

Watch the video and answer the questions below: [https://www.youtube.com/watch?v=2fhBvH\\_-tNM](https://www.youtube.com/watch?v=2fhBvH_-tNM)

Based upon what you see how would you describe skilful performance?

Using the information below and your knowledge from GCSE PE, for 4 of the skills you saw in the video can you classify each one:



## Skill Profiles - WE DO

Basic		Complex
Open		Closed
Self-Paced		Externally Paced
Gross		Fine

We will apply this understanding of skill to different sports to evaluate which type of skills are important in those sports and why these skills are needed for success

(Application - Grade 7/8 A03)

Skill 1:

Skill 2:

Skill 3:

Skill 4:

Complete the 2 tables on the next 2 pages:

Type of Guidance	AO1 – what is it?	AO2 – an example of it being used in sport	AO3 – advantages and disadvantages of using this type of guidance
Verbal			
Visual			
Manuel			
Mechanical			

Type of Feedback	AO1 – what is it?	AO2 – an example of it being used in sport	AO3 – advantages and disadvantages of using this type of guidance
Positive			
Negative			
Intrinsic			
Extrinsic			
Knowledge of results			
Knowledge of performance			

Watch the video below and then answer the following questions:

<https://www.youtube.com/watch?v=dmBqwWlJg8U>

What are the 4 factors that are important to allow us to learn through observational learning, explain each factor?

What could a coach do to make sure that their demonstrations are effective?

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# A Level Physical Education



Name: \_\_\_\_\_

## Sport and Society and technology in sport – Useful resources

Scan the QR codes below to help you understanding certain aspects of this section a little better.



Socialisation



Barriers in sport – gender



Barriers in sport



Mob football



Real tennis



Real tennis



Much Wenlock Olympic Games



Popular and rational recreation



Industrial revolution



Industrialisation and urbanisation



Barriers in sport – disability



National governing bodies



The British empire and sport



Mob sports



Mob sports



Mob sports

Much wenlock Olympic games



**Task:** In the space below, make some notes / mind maps / flow charts about some of the information you have learnt about from the QR codes. Choose at least 4 different areas.

Area 1: \_\_\_\_\_

Area 2: \_\_\_\_\_

Area 3: \_\_\_\_\_

Area 4: \_\_\_\_\_

## Popular Recreation

<b>Characteristic</b>	<b>Cultural Factor</b>
Cruel / violent	Harsh society, aggressive in nature, male dominated, unruly.
Occasional / part of a festival	Seasonal time, worked long hours, activities restricted to annual events.
Wagering	Gambling / betting were common as part of contests.
Clear class division	Two-tier society / feudal system, upper- and lower-class activities were separate.
Unwritten / simple rules	Illiteracy was widespread, uneducated.
Rural	Pre-industrial / pre-urban revolutions.
Local	Limited transport and communications.

### **Mob Football**

Watch the following video clip and write down any popular recreation characteristics that relate to mob football in the box below.

<https://www.youtube.com/watch?v=pqtd7LOoRVM>

## Rational Recreation

Characteristic	Cultural Factor
Fair play (respectable)	Emergence of new middle-class, public-school influence of non-violence.
Regionally / nationally / regularly	Improved transport.
Officials / referees	These were present to enforce the newly developed rules.
Gambling controlled	Increased law and order.
Stringent admin and codification	Strict and complex written rules were set down by national governing bodies (NGBs).
Purpose-built facilities	Lack of space, industrial patronage.
Amateurism / professionalism	Class structure and spectatorism.
Religion	Muscular Christianity, influence over free time.
Revolutions	Urban / industrial.

**Task:** using this picture and your own knowledge identify and annotate around the picture the characteristics of rational recreation.



This is a football match between England and Scotland in 1880.