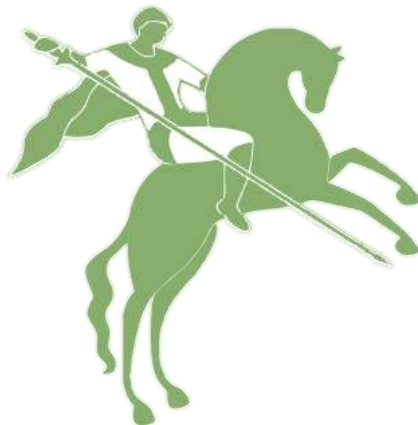


**St George's Academy**

# **Year 12**

## **A LEVEL PE**



**Transition Pack**

**2023-2024**

Hi all,

Thank you for showing an interest in studying A Level Physical Education. This transition pack will provide a summary of the course as well as reading, tasks and questions you will need to complete on your return to Sixth Form in September.

The new content you will have to learn will be split into three sections;

**1. Anatomy and Physiology**

**2. Skill Acquisition**

**3. Sport and society**

If you are unable to print this booklet, then please answer all tasks and questions on a word document and email/ save to a pen drive so it can be accessed at school.

You can also print and write on the booklet and bring the hard copy into school.

There will be an assessment based upon the content covered in this booklet in September.

**Your suitability for the A Level Physical Education course will be based upon your GCSE Physical Education Result, the quality of work produced in this booklet and the short assessment you will take in September.**

If you have any questions concerning this transition pack or A Level P.E in general, then please email Mr Harrison.

[Aaron.Harrison@st-georges-academy.org](mailto:Aaron.Harrison@st-georges-academy.org)

## Course Summary

Paper 1: Factors affecting participation in physical activity and sport	+	Paper 2: Factors affecting optimal performance in physical activity and sport	+	Non-exam assessment: Practical performance in physical activity and sport
<b>What's assessed</b>  Section A: Applied anatomy and physiology  Section B: Skill acquisition  Section C: Sport and society		<b>What's assessed</b>  Section A: Exercise physiology and biomechanics  Section B: Sport psychology  Section C: Sport and society and technology in sport		<b>What's assessed</b>  Students assessed as a performer or coach in the full sided version of one activity.  Plus: written/verbal analysis of performance.
<b>How it's assessed</b>  <ul style="list-style-type: none"> <li>• Written exam: 2 hours</li> <li>• 105 marks</li> <li>• 35 % of A-level</li> </ul>		<b>How it's assessed</b>  <ul style="list-style-type: none"> <li>• Written exam: 2 hours</li> <li>• 105 marks</li> <li>• 35 % of A-level</li> </ul>		<b>How it's assessed</b>  <ul style="list-style-type: none"> <li>• Internal assessment, external moderation</li> <li>• 90 marks</li> <li>• 30 % of A-level</li> </ul>
<b>Questions</b>  <ul style="list-style-type: none"> <li>• Section A: multiple choice, short answer and extended writing (35 marks)</li> <li>• Section B: multiple choice, short answer and extended writing (35 marks)</li> <li>• Section C: multiple choice, short answer and extended writing (35 marks)</li> </ul>		<b>Questions</b>  <ul style="list-style-type: none"> <li>• Section A: multiple choice, short answer and extended writing (35 marks)</li> <li>• Section B: multiple choice, short answer and extended writing (35 marks)</li> <li>• Section C: multiple choice, short answer and extended writing (35 marks)</li> </ul>		



**SECTION 'A' – MR HARRISON**



**SECTION 'B' – MRS JONES/MR FREEMAN**



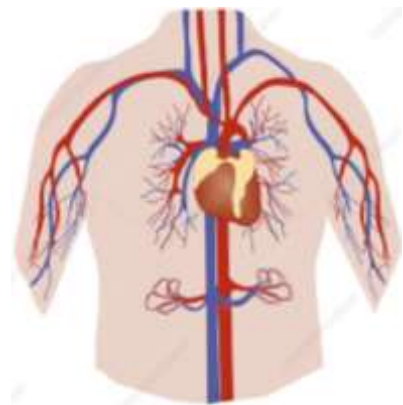
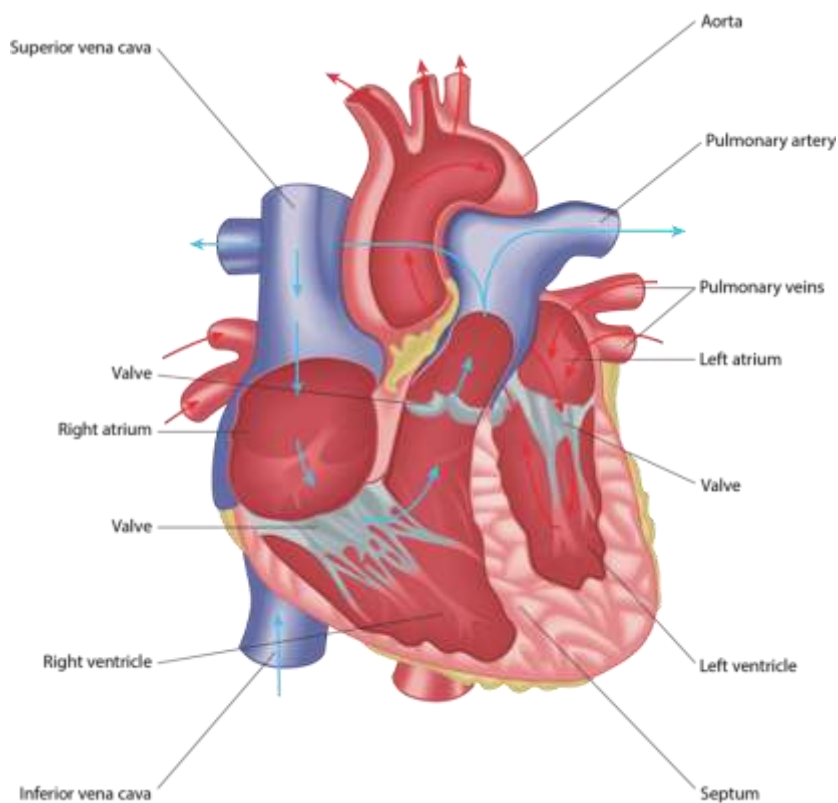
**SECTION 'C'- MRS GARNER**



# SECTION A

Applied Anatomy and Physiology

## Cardiovascular System



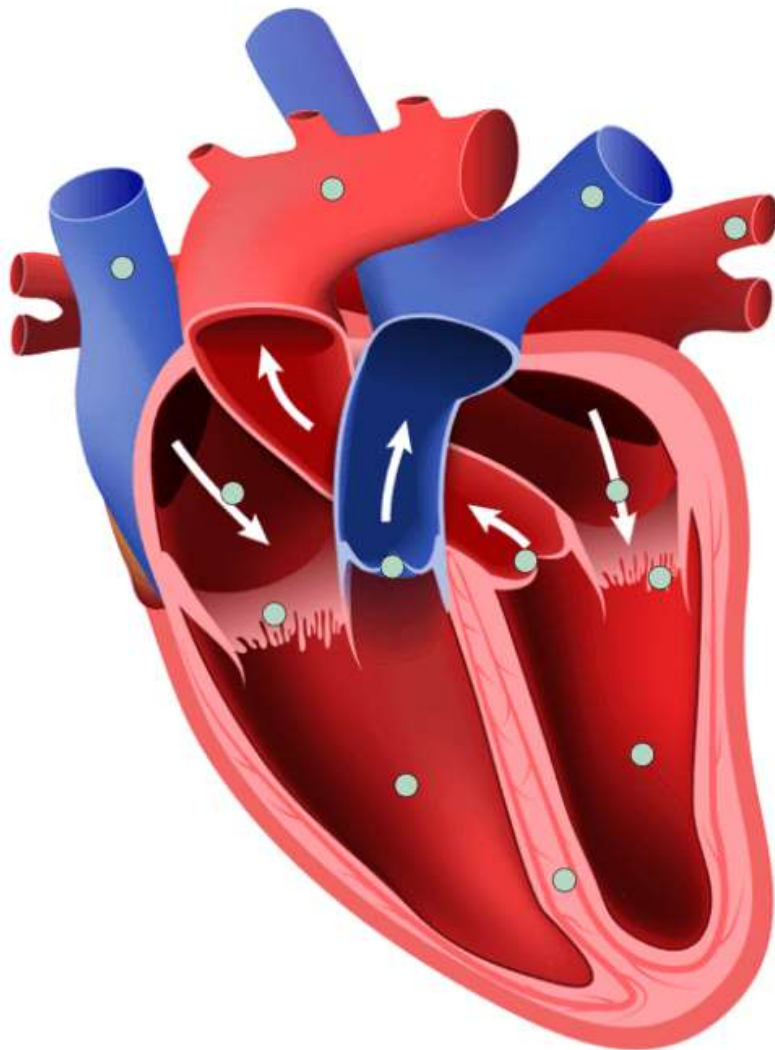
# RECAP



Using the diagram below, can you explain the pathway of blood through the heart?

Add the following to your explanations;

- Chambers, vessels, valves.
- Oxygenated / deoxygenated blood

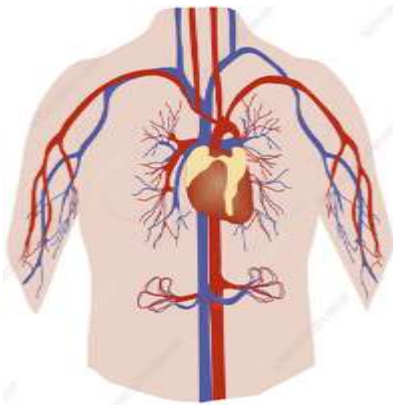






# Cardiac conduction system

The cardiac conduction system is the network of **nodes, cells and signals** that **controls your heartbeat**. Each time your heart beats, electrical signals travel through your heart. These signals cause different parts of your heart to **contract or relax**.



## CONDUCTION SYSTEM

- These are electrical impulses that trigger the cardiac cycle. They **are** also called **cardiac impulses**.
- Heart muscle is **myogenic** – it generates its own electrical impulses with no help from the brain
- This combines with its network of nerves to allow blood to flow around the body

# CONDUCTION SYSTEM

1. The cardiac signal starts from the cardiac muscle mass **sino-atrial node (SAN/ pacemaker)** in the muscular wall of the right atrium
2. This impulse spreads rapidly through both atria
3. This causes a **wave of excitation**, causing the atria to contract
4. Blood is forced into the ventricles
5. It then passes to another mass of cells known as the **atrio-ventricular node (AVN)**, which conducts the impulse from the atria to the ventricles.

**There is a 0.1 sec delay** to this move to allow the atrial to fill with as much blood as possible before ventricular contraction begins

# CONDUCTION SYSTEM

6. The signal then passes down the septum in conducting tissue fibres known as the **Bundle of His** – to the tip of the ventricle
7. It then splits into 2 bundles and then further into smaller bundles known as the **Purkinje fibres**
8. This spreads the excitation (impulses) through the ventricles
9. **Both ventricles contract forcing blood out of the heart**



<https://www.youtube.com/watch?v=II5RPs1hIGI>



Explain the role of the atrioventricular node in the cardiac conduction system.

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(Total 3 marks)

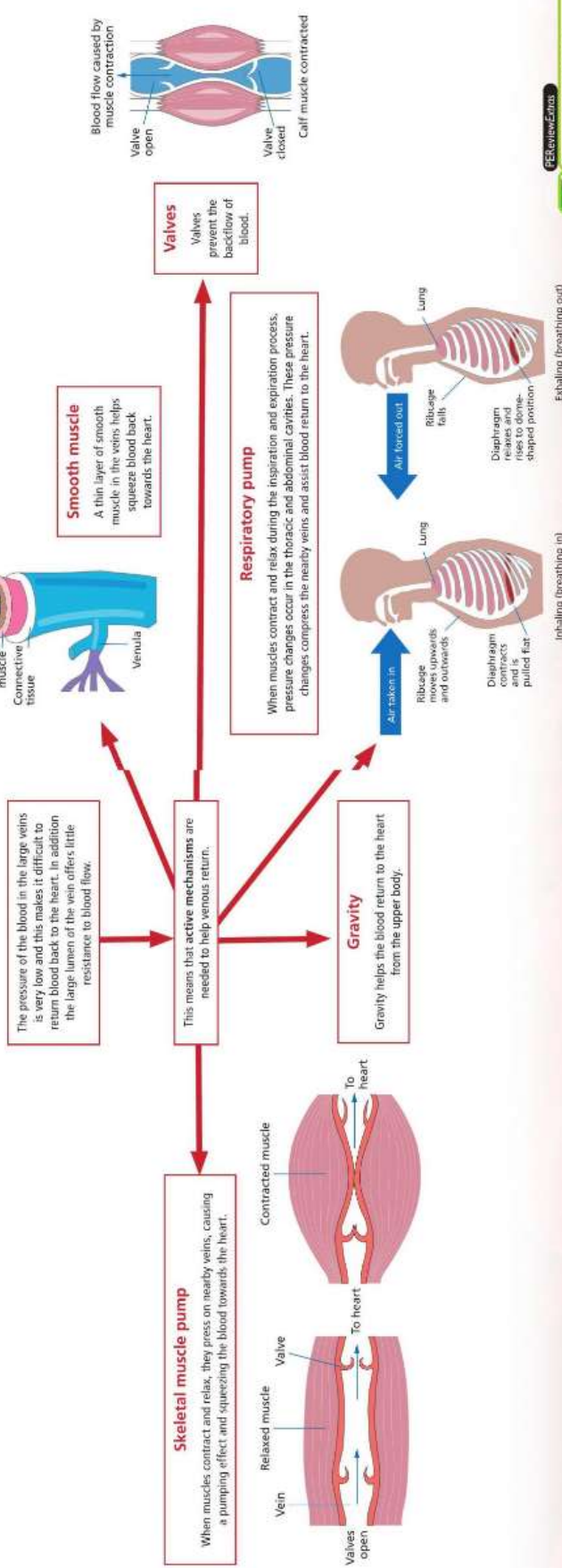




# Venous return

## Venous return mechanisms

Venous return is the return of blood to the right side of the heart via the vena cava. Up to 70% of the total volume of blood is contained in the veins at rest. This means that a large amount of blood can be returned to the heart when needed. During exercise, the amount of blood returning to the heart (venous return) increases. This means that if more blood is being pumped back to the heart then more blood has to be pumped out, so stroke volume will increase





Analyse how changes in venous return occurring during exercise help performance in aerobic events such as a triathlon.

You may use this space to plan your answer.



# Muscle fibre types

## TYPES OF MUSCLE FIBRE

- 3 main types;
- 1. SLOW OXIDATIVE (TYPE 1) (SLOW TWITCH)
- 2. FAST OXIDATIVE GLYCOLYTIC (TYPE II A)
- 3. FAST GLYCOLYTIC (TYPE II B)

Watch the video- match muscle fibre with athlete.

## MUSCLE FIBRES

- Skeletal muscles contain a mixture of all three types.
- The relative proportion of each fibre type is dependant on each person.
- Elite endurance athlete will have greater proportion of slow twitch fibres in leg muscle.

## SLOW TWITCH FIBRES

- Have a **slower contraction speed** than fast twitch fibres.
- Used in **low intensity exercises** such as long distance running.
- Produce most of their energy **aerobically**.
- Have specific characteristics that allow them to use oxygen more effectively.



## FAST TWITCH FIBRES

- **Faster contraction speed.**
- Generate **greater force of contraction.**
- **Fatigue very quickly.**
- Used for short, intense bursts of effort.
- Produce most of their energy **anaerobically**.

# CHARACTERISTICS OF SLOW AND FAST TWITCH FIBRES

CHARACTERISTIC	TYPE I	TYPE IIa	TYPE IIb
CONTRACTION SPEED	SLOW	FAST	FAST
MOTOR NEURONE SIZE	SMALL	LARGE	LARGE
MOTOR NEURON CONDUCTION CAPACITY	SLOW	FAST	FAST
FORCE PRODUCED	LOW	HIGH	HIGH
FATIGABILITY	LOW	MEDIUM	HIGH
MITOCHONDRIAL DENSITY	HIGH	MEDIUM	LOW
MYOGLOBIN CONTENT	HIGH	MEDIUM	LOW
CAPILLARY DENSITY	HIGH	MEDIUM	LOW
AEROBIC CAPACITY	VERY HIGH	MEDIUM	LOW
ANAEROBIC CAPACITY	LOW	HIGH	VERY HIGH
GLYCOLYTIC ENZYME ACTIVITY	LOW	HIGH	VERY HIGH



What is the 'all or none law'?

How does it link to muscle fibre types?

Can you apply the 'all or none' law to a sporting example?





# TEST YOUR KNOWLEDGE!

**Q1.**

In the diagram below, the main muscle fibre type used for a powerful forehand stroke is fast glycolytic (type IIx).

Right shoulder



**A**



**B**

State **three** characteristics of this muscle fibre type.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

(Total 3 marks)

**Q2.**

Gymnasts have to change the position of their body when performing a somersault during a gymnastic floor routine.

Name the muscle fibre type predominantly used by a gymnast during a floor routine **and** state the functional characteristics that allow these muscles to produce this type of movement.

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**Q3.**

During the race, a swimmer has to dive off the starting blocks as quickly as possible.

Identify the 'muscle fibre type' used to complete this action **and** justify your answer.

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(Total 3 marks)

Performers have to improve the capacity of the appropriate muscle fibres for their sport and to recover as quickly as possible following exercise.

Name the muscle fibre type in use during an endurance race **and** identify the physiological characteristics that allow these muscle fibres to work for an extended period of time.

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(Total 3 marks)

# SECTION B

## SKILL ACQUISITION & SPORT PSYCHOLOGY

In your first year of A Level P.E study you will be focusing on SKILL ACQUISITION with Mrs Jones. This topic area covers **Skill continuum and classification, practice for learning, theories of learning, guidance and feedback, memory and information processing.**

The content you will cover in this transition pack will be **skill continuum and classification.** This topic area is an expansion of Skill classification at GCSE level. It increases the level of detail with extra continuums and an emphasis on the **justification of skill placement on each of the continua.**

Please read the following content;

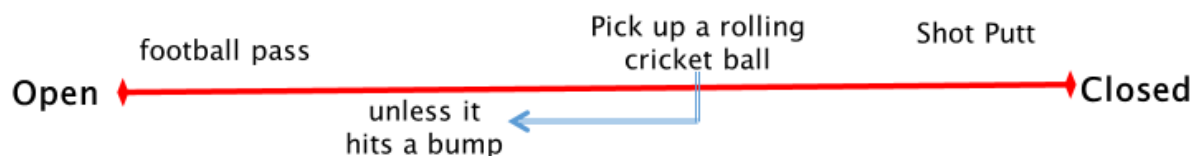
**Skill:** The learned ability to bring about predetermined results with the minimum outlay of time, energy or both.

### Continua

As you have probably already realised skills rarely fit neatly into one of these criteria, they usually have a combination of both/all the features of the criteria.

To really classify skill, the criteria have to be viewed as a continuum which the skill sits on. The dart throw mentioned earlier as a closed skill could still be affected by background noise, so has small elements of open skill while being predominantly a closed skill.

Here you can see how some different skills fit onto the open closed continuum.



### Gross & Fine Skill: extent of muscle used

This is based on the amount of muscular movement and extent of the muscle groups used in an action **Muscular Involvement.**

**GROSS SKILL** — A skill that uses large muscle groups.

**FINE SKILL** — A skill that uses smaller muscle groups.



### Externally Paced & Self-Paced Skills: control and rate of execution

This is based on the amount of control the performer has over the rate of execution and the speed in which it is performed. **PACING**

**EXTERNALLY PACED** — When the performer has no control over the start and speed of the skill.

**SELF-PACED** — When the performer controls the start and speed of the skill.



### Discrete, Serial & Continuous skills: Continuity

This is based on the **continuity** of the task.

**DISCRETE** — A skill that has a clear beginning and end.

**SERIAL** — A skill that contains several discrete skills in order to make a more integrated movement

**CONTINUOUS** — A skill that has no clear beginning and end



### High & Low skills: organisation

This is based on how easily skill can be broken down into parts, or sub-routines.

**LOW ORGANISED** – A skill that is easily broken down into parts.

**HIGH ORGANISED** – A skill that is not easily broken down into parts.



### Simple & Complex skills: degree of difficulty

This is based on the amount of information needed to complete the skill.

**SIMPLE** – A skill that requires few decisions when being performed.

**COMPLEX** – A skill that requires decision making using lots of information when performed.





## TASK 1

Using your knowledge of skill continua on the four different sporting skills below.

**For each one:**

1. **Name/Identify** the type(s) of skill being used.
2. **Classify** the skill using each of the continua you have read up on (5 in total).
3. **Justify** your answers with a short explanation. (Sorry you are past GCSE now).





## Task 2

### **JUSTIFICATION OF SKILL PLACEMENT ON EACH OF THE CONTINUA**

#### **SKILLS CAN CHANGE!**

A skill classified by one thing can change in different situations and, as the game develops, skills can be classified in different ways.

1. Review each of the classifications and think of your own example to illustrate the change in skills.
2. You must justify (give reason) for why it changed.

## **QUESTION**

1. The triple jump is an athletic event where the aim is to jump as far as possible. The jumper does this by performing a hop, a step and a jump from a running start. The photograph below shows an athlete performing the triple jump.



Classify the triple jump using the following continua:

- open – closed
- self-paced – externally-paced
- discrete – serial – continuous
- gross – fine.

**Justify your choices.**

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(Total 4 marks)

2. Give one example of a low organisation skill in football.

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(Total 1 mark)

3. State two factors that determine whether a skill is classified as open or closed.

a. 

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b. 

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(Total 2 marks)



# SECTION C

## SPORT AND SOCIETY

In your first year of A Level P.E study you will be focusing on Sport and Society with Mrs Garner. This topic area covers **globalisation of sport and sociological theory applied to equal opportunities in sport.**

The work you will cover in this transition pack will be based on additional research around certain topic areas which will help with your application of sport when learning the content in September.

**Please read the following information carefully before starting your research.**

### **Globalisation of sport in the 21st century:**

Throughout the year, you will learn how sport has been developed in Britain over time in depth. The key time periods are highlighted below with a brief summary for each.

#### **Pre-industrial (pre-1780)**

During the pre-industrial time in Britain, society was extremely different. Society was split between upper and lower class. It was extremely harsh for the lower class which was reflected in the game of 'mob football' which the lower class played occasionally. For the upper class, sport was extremely leisurely and more skilful. This was reflected in the sport they played- 'real tennis'.

#### **Industrial and post-industrial (1780–1900)**

During the industrial revolution, society in Britain changed dramatically. Many improvements to technology occurred which had an impact on the sport and activities that were played. Initially there were negative effects of the industrial revolution which linked to poor health and lack of space. However, positive impacts followed and this allowed more working class to participate in sport. During this time periods there was an emergence of the middle class emerged. The middle class helped improve sporting opportunities for the working class. During this time period, there was a great shift of sport that was offered and available and the idea of professionalism began to develop.

#### **Post World War II (1950 to present)**

After World War II to present day, there has been a huge increase in sporting opportunities and level in the UK. This is down to many factors including commercialisation, technology, creation of supporting organisations and many more.

**Research Task 1: Globalisation of sport**

For each sport listed below, summarise how the sport has developed in the UK over the time periods:

- a) Pre-industrial (pre-1780)
- b) Industrial and post-industrial (1780–1900)
- c) Post World War II (1950 to present)

If you run out of space below, please attach any additional research notes to your booklet.

**Athletics:****Tennis:****Football:**

Task 2- **Analyse the graph below**



### **Task 3- research based :**

In the UK, there are groups of individuals that are underrepresented in sport (females, ethnic minorities, disabled, low-socio economic status). Sport England and other UK organisations have created initiatives to help increase participation in these groups. Choose 2 of the following initiatives to research below:

- This Girl Can
- Sporting Equals
- 'I will if you will'
- 'Active Women'
- 'Breeze', 'Back to Netball' and 'Us girls'
- 'Places People Play'
- Get equipped
- Street Games
- Cricket4change
- EFDS
- 

#### **Campaign / Initiative:**

- Description of initiative:
  
- which underrepresented group does it relates to?
  
- When was the campaign/ initiative created and what organisation is supporting it?
  
- Where does the money come from?
  
- Any success stories?

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- Description of initiative:
  
- which underrepresented group does it relates to?
  
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- Any success stories?



You have completed the A level Physical Education induction pack.

You must bring this pack to your first lesson. This will be marked.

Attached is a booklet of useful P.E REVIEW magazine articles. Make sure to have a read!

See you in September.