

Key Stage 4 (10)

Course title: GCSE PE

Exam board: OCR

Specification code: J817

1.2.a Components of fitness

At the end of this topic area students should know the following:

- The definitions for each component of fitness.
- Be able to **apply** a range of sporting examples from physical activities and sports to each component of fitness.
- Be able to **identify** the suitable test for each component of fitness and **explain** the protocol to conduct each test.
- What is meant by the term normative data and how it is applied to guide you in the interpretation of the test results.

Autumn 1
(September
– October)
&
Autumn 2
(October –
December)

This is the first topic area that is taught in the GCSE PE program, the reasons are as follows:

It allows students to discuss and acquire the knowledge of a range of different sporting contexts, this builds on the knowledge they have in relation to the sports they participate in. This is beneficial as it leads into the muscles of the body and the skeleton topic areas, in which you must again apply a range of sporting scenarios.

In line with sports science, which replicate the knowledge and understanding of fitness testing and understanding the components of fitness.

During this time, it is vital that the fitness tests are conducted, so students understand the guidance and protocol of each test and secures their knowledge of the components of fitness. Doing it at this time of the year, the facilities are free and there is no clash with other PE groups.

1.1.a. The structure and function of the skeletal system

At the end of the topic students will **know** the following:

- The location of the major bones of the body.
- The 6 functions of the skeleton and apply practical examples to each.
- Identify major joints with the associated articulating bones in the knee, elbow, shoulder, and hip.
- Knowledge of the different types of movement at the hinge and ball and socket joints, as well as being able to apply these movements to examples from physical activities and sports.
- Demonstrate an understanding of the components of a synovial joint.

This follows on the sequential planning as students have learnt the components of fitness and discussed a range of practical examples from a variety of sports.

Therefore, once they have learnt a range of movements, they can start learning the ways in which the skeleton allows movement to occur and its functions.

Following on from this, it is key to have an understanding of these sporting examples and apply them to the 2 main joints that are learnt and the movements that occur, again providing key examples.

1.1.b The structure and function of the muscular system

At the end of the topic students will **know** the following:

- Know the name and location of the major muscle groups in the human body.
- Identify each muscle group and provide practical examples of the movement that muscle creates.
- Develop their knowledge of the roles muscles as agonists, antagonists, fixators and how they operate as antagonistic pairs, providing practical examples from physical activity and sport.

The muscular system must follow the skeletal system, as once the range of movements have been learnt it is vital that the students learnt the muscle groups that control this movement.

1.1.c Movement analysis

At the end of the topic students will **know** the following:

- The 3 different types of levers in the body.
- How they operate to produce movement.
- Understand the term 'mechanical advantage' and how it is used to move large loads with minimal effort.
- Know the location of the planes of movement in the body and their application to physical activity in sport.
- Know the location of the axes of rotation in the body and their application to physical activity in sport.

This topic area is again linked to movement and the content students have been taught in the skeletal and muscular systems. It is vital that students can understand these movements prior to being taught levers, as you must identify the muscle that creates the effort as part of the lever system.

1.1.d. The cardiovascular and respiratory system

At the end of the topic students will **know** the following:

- Understand the pathway of blood through the heart.
- The different types of blood vessels in the body, and the structure of each.
- The double circulatory pump system; systemic and pulmonary system.
- The definition of the terms cardiac output, stroke volume and heart rate.
- Understand the pathway of air through the respiratory system.
- Know the role of the respiratory muscles in breathing.
- How to define the terms breathing rate, tidal volume, and minute ventilation.
- Understand about the alveoli as the site for gas exchange.
- Know the definitions for aerobic and anaerobic exercise.

Spring 1
(January –
February)
&
Spring 2
(February –
March)

The cardiovascular system is taught at this stage as having previously discussed the muscular and skeletal system and ‘how’ the body moves. It is important now to focus on what now ‘makes’ the body move.

These topics are taught together as they are directly linked, the must be able to understand the relationship between the capillaries and the alveoli and the transfer of oxygen between them to allow body functioning.

Cross-curricular links – This is closely matched to the biology curriculum who will also be teaching parts of the cardiovascular system, including the components of the heart the pathway of the blood and the process of gaseous exchange.

	<p style="text-align: center;">1.1.e Effects of exercise on the body systems</p> <p>At the end of the topic students will know the following:</p> <ul style="list-style-type: none"> • A knowledge of the short-term effects of exercise on the body. • An understanding of the long-term effects of exercise but be able to separate into the 4 different body systems that have been previously learnt. <p>This is taught in this sequence as students must have the knowledge of the body systems to able to make the links to the short- and long-term effects of exercise.</p> <p>This is taught straight after the cardiovascular and respiratory systems as there is reciprocation of content in relation to the cardiac and respiratory terms.</p>
<p>Summer 1 (April – June) & Summer 2 (June – July)</p>	<p style="text-align: center;">1.2.b. Applying principles of training</p> <p>At the end of the topic students will know the following:</p> <ul style="list-style-type: none"> • Students will develop their knowledge of the principles of training. They will define each principle and be able to apply each to a personal exercise/training programme. • Students will develop their knowledge and understanding of how to optimise training using the FITT principle and different types of training. • Students will know the key components and physical benefits of a warmup and cool down applied to physical activities and sports. <p>Once we have had the initial information regarding the body systems and the effects it has on the human body. It is important to then focus on the types of training that can impact the body.</p> <p>This is sequentially planned after the effects of exercise as it discusses the different types of training and principles of training, and these can be applied to the previous topic area.</p> <p>Applying principles of training, types of training and warm up/cool down are taught as a collective as it helps to link these together as the SPOR training principle could include the different types of training, and prior to conducting training you would need to know how to warm up and cool down.</p>

<p>Summer 1 (April – June) & Summer 2 (June – July)</p>	<p style="text-align: center;">1.3.c. Preventing injury in physical activity and training</p> <p>At the end of the topic students will know the following:</p> <ul style="list-style-type: none"> • Students will know and understand how to prevent injury when participating in physical activities and sport. • The potential hazards will be known in a range of physical activities and sports settings. • Students will now how risks can be minimised by using appropriate equipment clothing, correct lifting techniques, using the warm up and cool down and an appropriate level of competition. <p>This is taught in this sequence as once the types of training are discussed, it leads onto during those types of training, how do you ensure that participants are kept safe and how would you minimise the risk of injury occurring in these sports.</p>
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