WORKBOOK

OCR GCSE (9–1)

PE

- Full topic coverage
- Over 300 questions
- Answers free online

- ✓ Actively develops knowledge and encourages independent learning with practice questions and short topic summaries
- ✓ Prepare for assessment with exam-style practice questions and clear spotlight of the Assessment Objectives

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Contents

Paper 1: Physical factors affecting performance

Paper 2: Socio-cultural issues and sports psychology

Paper 1 Physical factors affecting performance

Topic 1 Applied anatomy and physiology

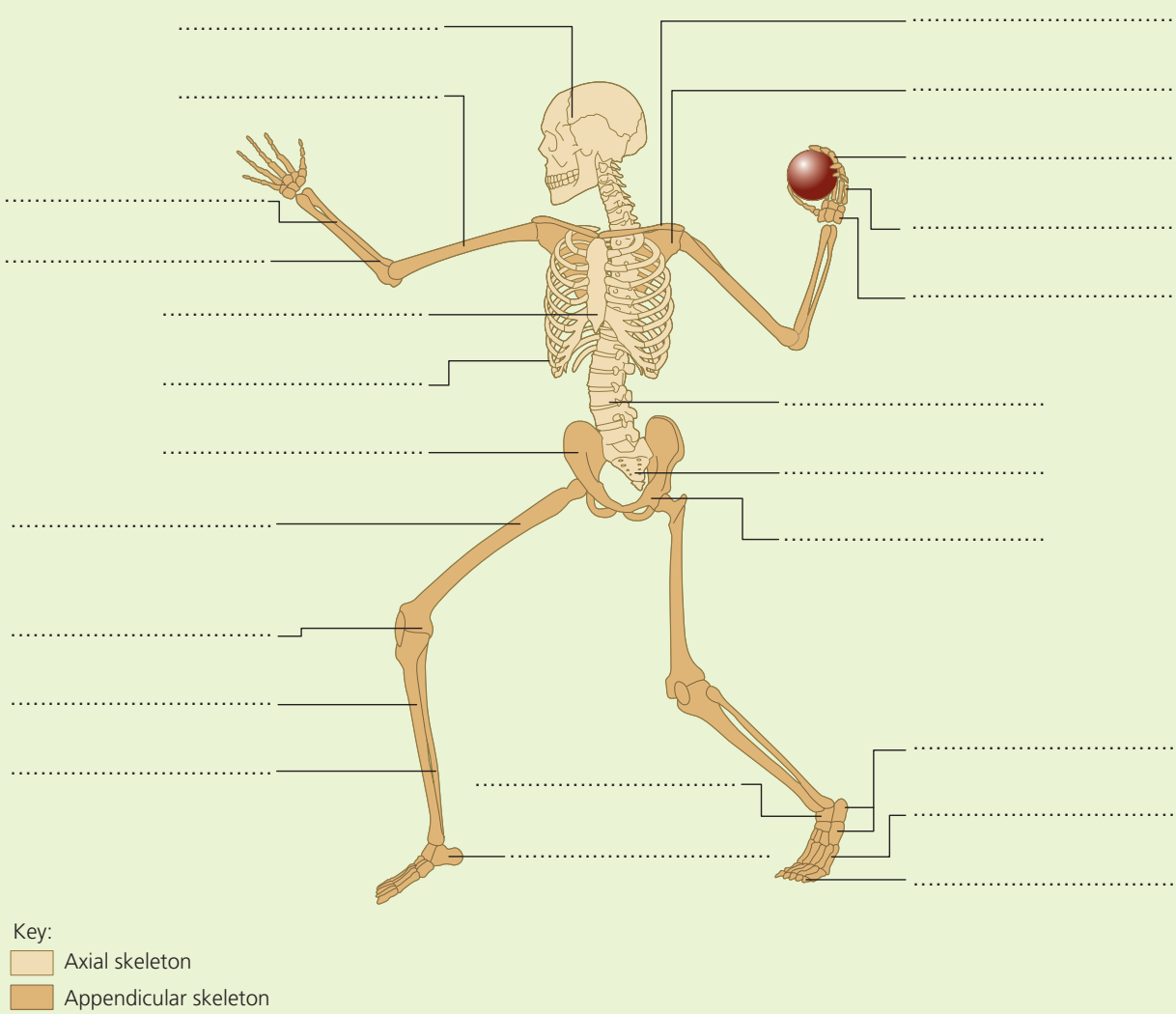
The structure and function of the skeletal system

This topic requires knowledge of the location of major bones, the articulating bones at the elbow, knee, ankle, hip and the functions of the skeleton. Knowledge on joints includes the types of synovial joint, the movement at hinge joints, and ball and socket joints, and the role of cartilage, ligaments and tendons.

Practice questions ?

AO1: Knowledge and understanding

1 Label the bones in the skeleton below. **24 marks**



2 One of the functions of the skeleton is red blood cell production. Where does this take place? **1 mark**

.....

3 Using the following words, fill in the blanks with the correct bone that protects each internal organ. **2 marks**

- Cranium
- Vertebrae
- Ribs

Heart: .....

Brain: .....

Spinal cord: .....

4 The storage of minerals is a function of the skeleton. Identify the importance of storing iron and calcium. **2 marks**

Iron: .....

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Calcium: .....

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5 Define the term 'synovial joint'. **1 mark**

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6 Complete the table below by identifying each type of synovial joint. The first one has been completed for you. **3 marks**

Joint	Type
Knee	*Hinge*
Hip	
Shoulder	
Elbow	

7 Which of the following is an articulating bone of the shoulder joint? Put a tick in the correct box. **1 mark**

A Scapula ☐

B Clavicle ☐

C Ribs ☐

D Sternum ☐

8 The shoulder is a ball and socket joint and has six types of movement. Which two types of movement are missing from the following list? **2 marks**

- Flexion
- Extension
- Abduction
- Adduction

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9 Which of the following is **not** a role of ligaments? **1 mark**

A They connect bone to muscle. ☐

B They stabilise the joint. ☐

C They act as shock absorbers. ☐

D They help maintain correct movement. ☐

10 Describe the role of cartilage during performance in an activity. **1 mark**

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AO2: Application

11 Name **two** articulating bones in the knee joint that could potentially be injured in a dangerous tackle in football. **2 marks**

1 .....

2 .....

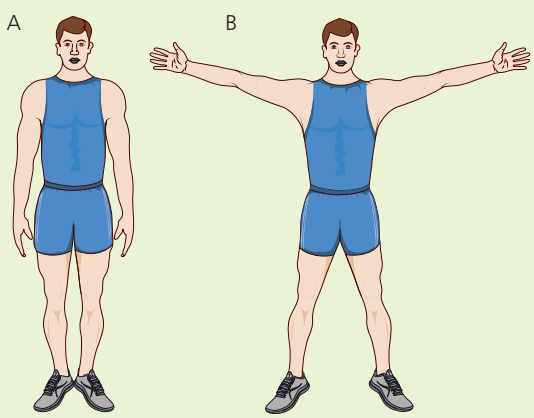
12 Name **one** articulating bone in the elbow that could be injured in a fall in basketball. **1 mark**

.....

13 Give **one** example of protective equipment that will protect the tibia. **1 mark**

.....

14 Name the joint movement that occurs in both shoulders of the performer as they move from position A to position B. **1 mark**



Name of joint movement: .....

15 Name the joint movement that occurs in the ankle and knee in the back leg of the sprinter. **2 marks**

Knee: .....

Ankle: .....

AO3: Analysis and evaluation

16 Assess how the skeleton's functions of support and protection are important for a rugby player during a game. **2 marks**

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17 Ligaments connect bones to other bones. Assess how ligaments can help a tennis player during a match. **2 marks**

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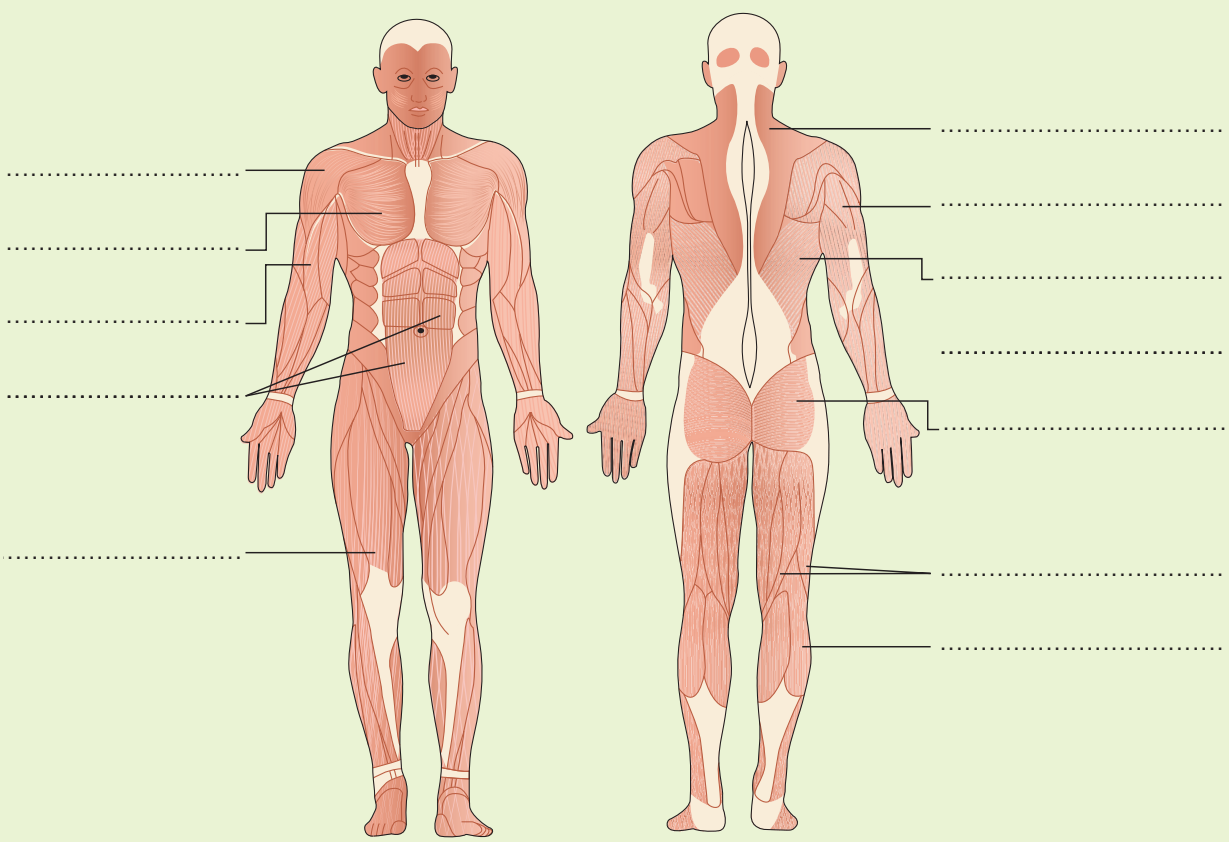
The structure and function of the muscular system

In this topic area you need to name and label the deltoid, trapezius, latissimus dorsi, pectorals, biceps, triceps, abdominals, quadriceps, hamstrings, gluteals and gastrocnemius. You will also be required to identify the movement these muscles produce in examples from physical activity and sport. Finally, an understanding of the definition and role of an agonist, antagonist and fixator is required, together with an explanation of antagonistic muscle action.

Practice questions

AO1: Knowledge and understanding

1 Label the muscles on the diagram below. **12 marks**



2 Complete the table below to match the names of the muscles with the movements they perform. **10 marks**

Name of muscle	Movement it performs
	Brings the arm back in towards the midline of the body (adduction at the shoulder) and lifts the arm forwards (flexion at the shoulder joint)
Quadriceps	
	Bends the leg (flexion of the knee joint)
	Lifts the arm forwards (flexion at the shoulder) and out to the side (abduction of the shoulder)
	Bends the body forwards at the hips (flexion of vertebral column)
Gluteals	Moves the leg backwards (extension of the hip joint) and brings the leg back in towards the mid line of the body (adduction of the hip joint)
Biceps	
	Extension at the neck
Gastrocnemius	
Triceps	
	Moves the arm backwards (extension of the shoulder joint) and brings the arm back in towards the mid line of the body (adduction of the shoulder joint)

3 Draw lines to match up key term on the left with the correct definition on the right: **3 marks**

Agonist	The muscle that works with others to stabilise the joint
Antagonist	The working muscle that produces or controls the joint movement
Fixator	Opposes the action of the agonist

AO2: Application

4 A footballer kicks a ball. Their knee extends and their ankle plantarflexes. Name the muscles that perform these actions. **2 marks**

Extension of the knee: ……

Plantarflexion of the ankle: ……

5 A tennis player performs an overarm serve by swinging their arm back as they prepare to hit the ball. Which muscle do they use to perform this action? **1 mark**

.....

6 In the execution of a chest pass, a basketball player extends their elbows. Name the muscle used to perform this action. **2 marks**

.....

7 Look at the picture below.

Name the muscles acting on the ankle, knee and hip joint to achieve the position shown in the back leg. **3 marks**

Ankle joint: …… ……..……..

Knee joint: ……...……...

Hip joint: ……....…….

AO3: Analysis and evaluation

8 The elbow joint can flex and extend. During flexion, explain how the pair of muscles at the elbow joint work together. **3 marks**

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Movement analysis

This topic requires knowledge of the three classes of lever, together with examples of when they are used in sport and physical activity. An awareness of the mechanical advantage provided by levers in movement is also required. You will also need an understanding of the three planes of movement and axes of rotation, and be able to identify movement that occurs in these planes and axes.

Practice questions

AO1: Knowledge and understanding

1 Name the **four** parts of a lever. **4 marks**

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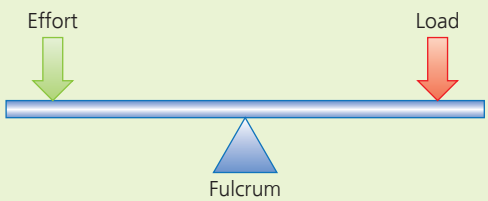
2 Identify the types of levers in the diagrams below: **3 marks**



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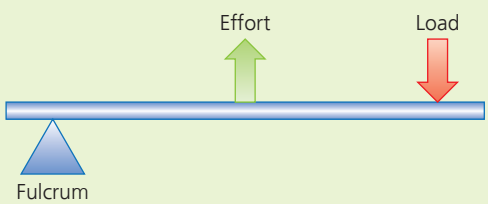

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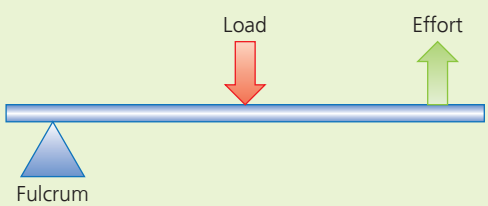

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3 Which of the following statements about mechanical advantage is true? Tick the correct answer. **1 mark**

A Makes a large amount of force into a much smaller force ☐

B Moves a large load with a smaller effort ☐

C Mechanical advantage = load × effort ☐

D Moves a small load with a larger effort ☐

WORKBOOK

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PE

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