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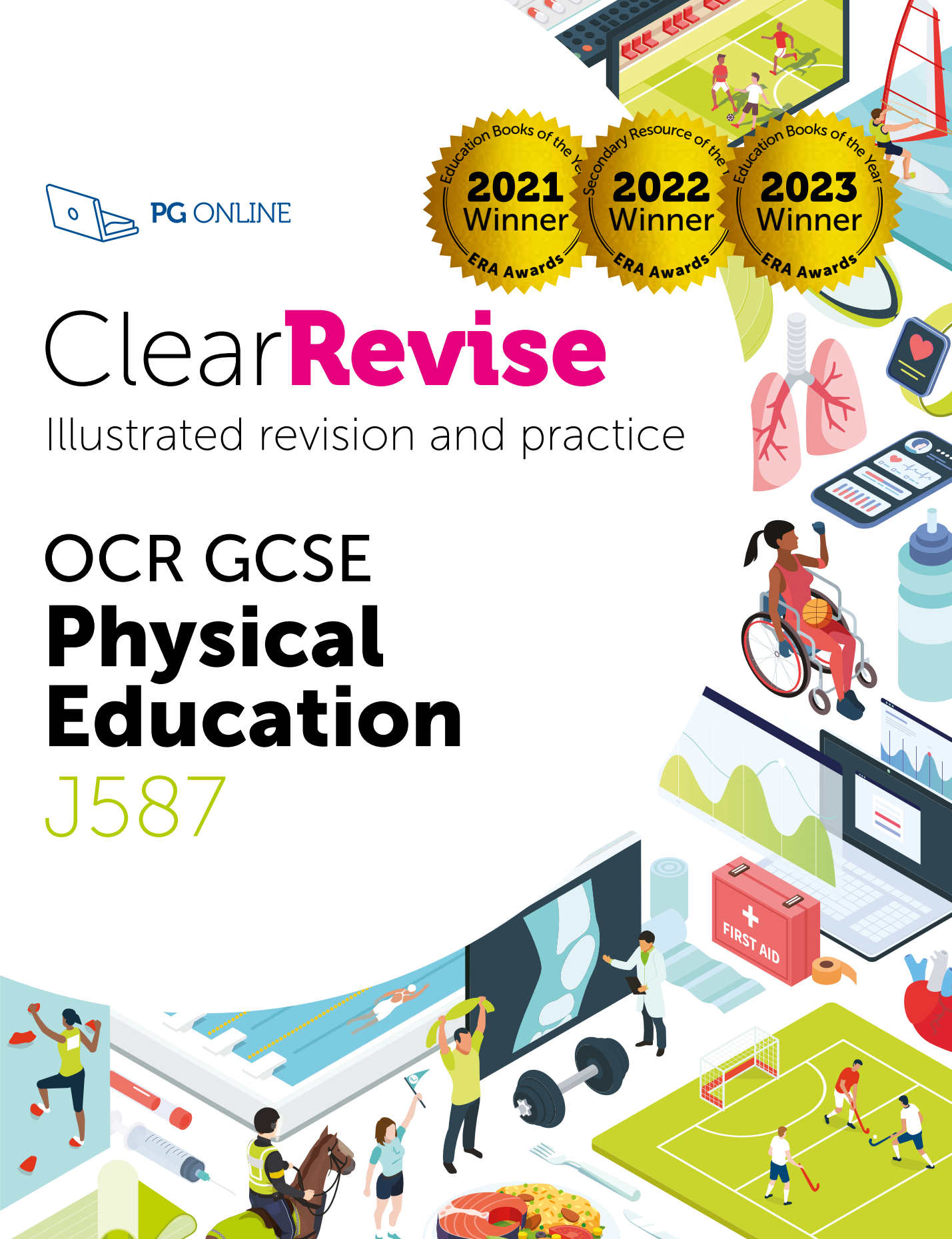


Clear**Revise**

Illustrated revision and practice

OCR GCSE **Physical Education**

J587



Clear**Revise**[®]

OCR GCSE

Physical Education J587

Illustrated revision and practice

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PREFACE

Absolute clarity! That's the aim.

This is everything you need to ace the exams and beam with pride. Each topic is laid out in a beautifully illustrated format that is clear, approachable and as concise and simple as possible.

Each section of the specification is clearly indicated to help you cross-reference your revision. The checklist on the contents pages will help you keep track of what you have already worked through and what's left before the big day.

We have included worked exam-style questions with answers. There is also a set of exam-style questions at the end of each section for you to practise writing answers. You can check your answers against those given at the end of the book.

LEVELS OF LEARNING

Based on the degree to which you are able to truly understand a new topic, we recommend that you work in stages. Start by reading a short explanation of something, then try to recall what you've just read. This will have a limited effect if you stop there but it aids the next stage. Question everything. Write down your own summary and then complete and mark a related exam-style question. Cover up the answers if necessary but learn from them once you've seen them. Lastly, teach someone else. Explain the topic in a way that they can understand. Have a go at the different practice questions – they offer an insight into how and where marks are awarded.

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THE SCIENCE OF REVISION

Illustrations and words

Research has shown that revising with words and pictures doubles the quality of responses by students.¹ This is known as ‘dual-coding’ because it provides two ways of fetching the information from our brain. The improvement in responses is particularly apparent in students when they are asked to apply their knowledge to different problems. Recall, application and judgement are all specifically and carefully assessed in public examination questions.

Retrieval of information

Retrieval practice encourages students to come up with answers to questions.² The closer the question is to one you might see in a real examination, the better. Also, the closer the environment in which a student revises is to the ‘examination environment’, the better. Students who had a test 2–7 days away did 30% better using retrieval practice than students who simply read, or repeatedly reread material. Students who were expected to teach the content to someone else after their revision period did better still.³ What was found to be most interesting in other studies is that students using retrieval methods and testing for revision were also more resilient to the introduction of stress.⁴

Ebbinghaus’ forgetting curve and spaced learning

Ebbinghaus’ 140-year-old study examined the rate at which we forget things over time. The findings still hold true. However, the act of forgetting facts and techniques and relearning them is what cements them into the brain.⁵ Spacing out revision is more effective than cramming – we know that, but students should also know that the space between revisiting material should vary depending on how far away the examination is. A cyclical approach is required. An examination 12 months away necessitates revisiting covered material about once a month. A test in 30 days should have topics revisited every 3 days – intervals of roughly a tenth of the time available.⁶

Summary

Students: the more tests and past questions you do, in an environment as close to examination conditions as possible, the better you are likely to perform on the day. If you prefer to listen to music while you revise, tunes without lyrics will be far less detrimental to your memory and retention. Silence is most effective.⁵ If you choose to study with friends, choose carefully – effort is contagious.⁷

1. Mayer, R. E., & Anderson, R. B. (1991). Animations need narrations: An experimental test of dual-coding hypothesis. *Journal of Education Psychology*, (83)4, 484–490.
2. Roediger III, H. L., & Karpicke, J.D. (2006). Test-enhanced learning: Taking memory tests improves long-term retention. *Psychological Science*, 17(3), 249–255.
3. Nestojko, J., Bui, D., Kornell, N. & Bjork, E. (2014). Expecting to teach enhances learning and organisation of knowledge in free recall of text passages. *Memory and Cognition*, 42(7), 1038–1048.
4. Smith, A. M., Floerke, V. A., & Thomas, A. K. (2016) Retrieval practice protects memory against acute stress. *Science*, 354(6315), 1046–1048.
5. Perham, N., & Currie, H. (2014). Does listening to preferred music improve comprehension performance? *Applied Cognitive Psychology*, 28(2), 279–284.
6. Cepeda, N. J., Vul, E., Rohrer, D., Wixted, J. T. & Pashler, H. (2008). Spacing effects in learning a temporal ridgeline of optimal retention. *Psychological Science*, 19(11), 1095–1102.
7. Busch, B. & Watson, E. (2019), *The Science of Learning*, 1st ed. Routledge.

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MARK ALLOCATIONS

Green mark allocations^[1] on answers to in-text questions throughout this guide help to indicate where marks are gained within the answers. A bracketed '1' e.g. ^[1] = one valid point worthy of a mark. In longer answer questions, a mark is given based on the whole response. In these answers, a judgement should be made using the levels-based mark scheme on page 99. There are often many more points to make than there are marks available so you have more opportunity to max out your answers than you may think.

TOPICS FOR PAPER 1

Physical factors affecting performance
(J587/01)

Information about Component 1

Mandatory written exam: 1 hour

60 marks

30% of the qualification grade

Externally assessed.

All questions are mandatory.

Use black ink. You can use an HB pencil, but only for graphs and diagrams.

Calculators are permitted in this examination.

Specification coverage

1.1 Applied anatomy and physiology

1.2 Physical training

Questions

This paper consists of a mixture of objective response and multiple-choice questions, short answers and extended response items.

The use of data analysis skills are spread across all components and topics throughout the course.

TYPES OF SYNOVIAL JOINT

A synovial joint connects two or more bones within a joint capsule, allowing a wide range of movement to occur.

Structure of a synovial joint (the knee)

A Tendons

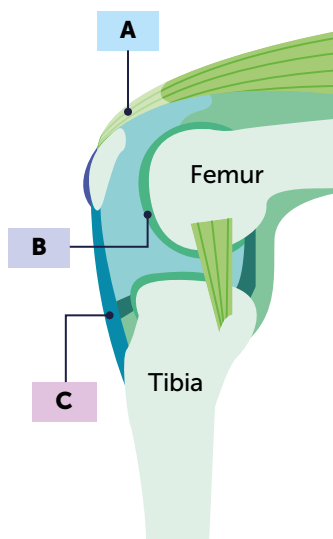
Tendons are a tough yet flexible band of fibrous tissue which join muscles to bones, pulling them when muscles contract.

B Cartilage

Cartilage is a tough, elastic, fibrous connective tissue. It absorbs shock and acts as a cushion between the bones. It prevents bones from rubbing together directly, reducing wear and friction.

C Ligaments

Ligaments are short bands of tough and flexible tissue connecting bones together and stabilising a joint to prevent dislocation. Elasticity in the ligaments absorbs shock.



David is a competitive rock climber. His shoulders, elbows and knees are in constant use.

Describe the role of cartilage and ligaments in the prevention of injury. [3]

Cartilage absorbs shock^[1] / provides a buffer between bones, preventing direct friction^[1] / aids mobility or movement.^[1]

Ligaments provide elasticity to absorb shock^[1] / help keep the joint together by connecting bone to bone^[1] / provide stability or restrict movement.^[1]

Joints



Hinge joints

The **elbows** and **knees** are example of hinge joints. They allow movement in one plane through flexion and extension with up to 180 degrees of motion.

Elbow – Articulating bones: humerus, radius, ulna.

Knee – Articulating bones: femur, tibia.



Ball and socket joints

The **shoulders** and **hips** are examples of ball and socket joints. A ball-shaped end of one bone fits into a cup-shaped socket in another. This allows for flexion and extension, abduction and adduction, circumduction and rotational movement in almost all directions, making sporting actions such as a cricket bowl or breaststroke swimming possible.

Shoulder – Articulating bones: humerus, scapula.

Hip – Articulating bones: pelvis, femur.

LEVER SYSTEMS

There are three classes of lever system in the body. Each lever system has a fulcrum, load and effort.

Fulcrums, load and effort

Levers involve a rigid bar (bone) that pivots or rotates about a fulcrum (joint) with a load applied. A lever system comprises:

A **fulcrum** or pivot around which a force is exerted. (In the body, this is a joint.)

A **load** (or **resistance**) being moved. (In the body this relates to bodyweight and any additional load being carried.)

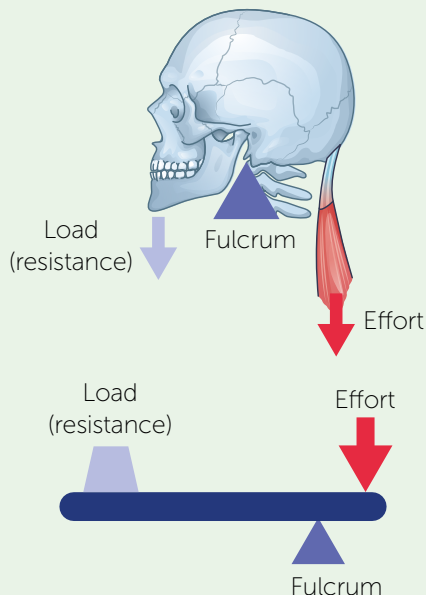
The **effort** or force required to move the load. (Muscular effort.)

First, second and third class lever systems



First class lever

First class levers have the fulcrum between the effort and the load or resistance, like a see-saw.



A football player heads a ball using a class 1 lever action in a Serie A Juventus game.



1. Complete the statement: The type of lever system working at the knee in the upward phase of a squat is an example of a _____ . [1]
2. Identify the lever system that is used to go up onto the toes when pushing off the blocks in a sprint start. [1]

FLE 123 is a useful mnemonic to remember the lever classes.
 A class 1 has the *Fulcrum* in the middle.
 A class 2 has the *Load* in the middle
 A class 3 has the *Effort* in the middle.

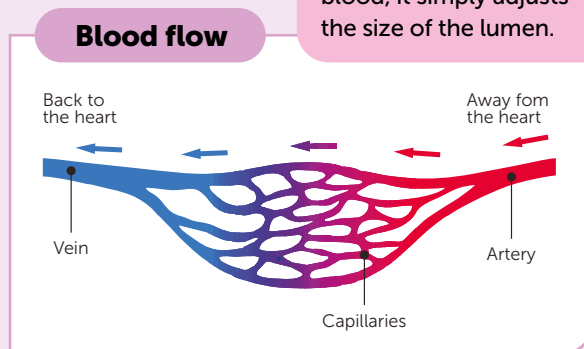
1. *Third class lever.*^[1]
2. *Second class lever.*^[1]

BLOOD VESSELS

The body contains three different types of blood vessel: **arteries**, **veins** and **capillaries**.

The aorta branches into different arteries that carry blood to the major organs. These branch more and more until they form tiny vessels within tissues called capillaries which wrap around muscles and organs. Capillaries then join up to form veins.

Note that the muscle in arteries does **NOT** pump blood, it simply adjusts the size of the lumen.



Blood vessel structure and function

	Arteries	Capillaries	Veins
	<p>Thick outer wall</p> <p>Small lumen</p> <p>Thick layer of muscle and elastic fibre</p>	<p>Very small lumen</p> <p>Very thin wall, only one cell thick</p>	<p>Thin layer of muscle and elastic fibres</p> <p>Large lumen</p> <p>Outer wall is fairly thin</p>
Function	Carry oxygenated blood at high pressure away from the heart	Exchange of substances with cells	Return deoxygenated blood at low pressure to the heart
Lumen	Narrow to maintain pressure	Very narrow. Keeps red blood cells close to tissue cells	Large, so there is less resistance to blood flow
Wall	Elastic fibres stretch and recoil to maintain pressure. Thick wall resists bursting	Very thin – Short distance across to maximise gas exchange by diffusion	Low pressure so no need for a thick elastic wall
Valve	No – High pressure blood keeps moving	No	Yes – Prevents backflow of low pressure blood

1. Define what is meant by a blood vessel. [1]

2. "All arteries carry oxygenated blood. All veins carry deoxygenated blood."

Is this statement true or false? [1]

1. A tubular structure that carries blood around the body. [1]

2. False. [1] All arteries carry blood from the heart and veins carry it toward the heart but the pulmonary vein carries oxygenated blood to the heart from the lungs and the pulmonary artery carries deoxygenated blood to the lungs to be oxygenated.

EXAMINATION PRACTICE

1. Which **one** of the following bones is located at the hip? [1]
 - A – Femur
 - B – Scapula
 - C – Talus
 - D – Tibia

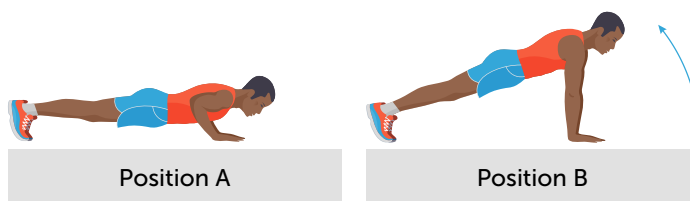
2. A wide circular movement of the arm around the shoulder joint is an example of circumduction. Is this statement true or false? [1]
 - True
 - False

3. Blood flows around the body in a double circulatory system.
 - (a) Which **one** of the following describes the correct pathway of the blood as it enters the heart via the pulmonary vein? [1]
 - A – Left atrium → left ventricle → right atrium → right ventricle
 - B – Left atrium → right atrium → left ventricle → right atrium
 - C – Right atrium → right ventricle → left atrium → left ventricle
 - D – Right ventricle → left ventricle → right atrium → left atrium
 - (b) Describe the differences between the aorta and the vena cava. [4]

4. Give **three** functions of the skeleton. [3]

5. Tendons, ligaments and cartilage are found at major synovial joints.
 - (a) Explain **two** differences between tendons and ligaments. [2]
 - (b) State the function of cartilage in the prevention of pain and injury. [1]

6. Lee conducts a press up into a high plank position.



- (a) Identify the working muscle in the arm above the elbow responsible for the movement from position A to position B. [1]
- (b) Describe the role of the latissimus dorsi as a fixator muscle in a press up. [2]

TOPICS FOR PAPER 2

Socio-cultural issues and sports psychology

Information about Component 2

Mandatory written exam: 1 hour

60 marks

30% of the qualification grade

Externally assessed.

All questions are mandatory.

Use black ink. You can use an HB pencil, but only for graphs and diagrams.

Calculators are permitted in this examination.

Specification coverage

2.1 Socio-cultural influences

2.2 Sports psychology

2.3 Health, fitness and well-being.

Questions

This paper consists of a mixture of objective response and multiple-choice questions, short answers and extended response items.

FACTORS AFFECTING PARTICIPATION IN PHYSICAL ACTIVITY AND SPORT

Different factors affect the levels of participation and engagement of different **social groups** in exercise and activity.

Social grouping by Age

Examples of factors affecting participation:

Cost

Younger people may not have the money to afford to take part in certain activities. Older people may have increased financial commitments and living costs that lower their disposable income available for activity.

Education

Time for schoolwork may come before time for evening sports clubs. Some schools offer greater sporting provision than others. People may simply not know what is available to them.

Discrimination

Not all clubs and memberships are available to all **ages** - some may not allow children.



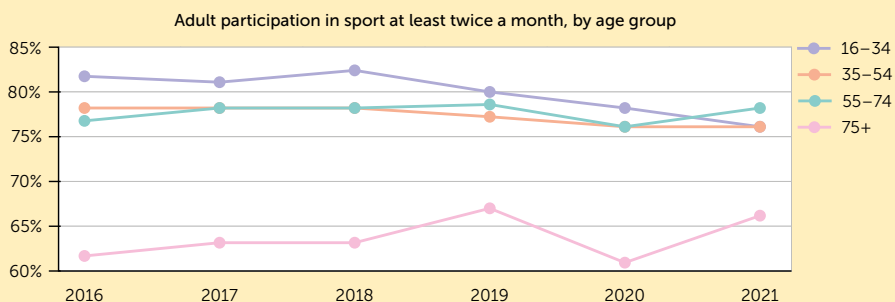
Media coverage

An increase in media coverage of older sports performers may motivate older people to take part. Most active sports people disappear from the media when they retire which is usually only in their 30s.

The adult participation in sporting activities for different age groups is shown in Figure 3.

Give **two** reasons why the over 75s have significantly lower levels of participation. [2]

Figure 3



Answers may include: illness / obesity / poor health,^[1] poor mobility,^[1] friends or social group do not participate,^[1] lack of older role models,^[1] self conscious / feel too old,^[1] fear of injury,^[1] lack of elderly sports groups / provision,^[1] discrimination against the elderly.^[1]

COMMERCIALISATION OF SPORT

Commercialisation is the influence of business on sport to make a profit which can lead to exploitation. This involves sponsorship and media coverage.

The golden triangle

The **golden triangle** is a term used to show the links and relationship between **sponsorship**, **sport** and the **media**.

Each of the three aspects in the golden triangle are reliant on each other.



1

The media (usually television) pays money to the sport to be able to film and broadcast the event(s).



2

The media, for example Sky Sports, Amazon Prime or BT Sport, provides sports coverage to gain revenue from viewer subscriptions.



3

Sponsors pay money to the sport to sponsor an event.



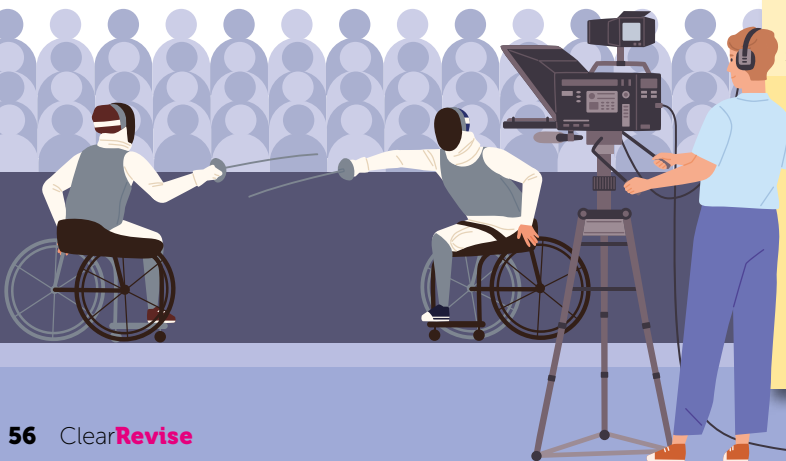
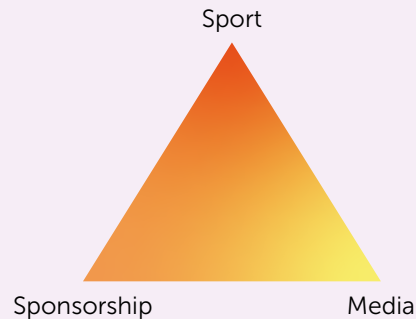
4

Sporting organisations receive valuable funding and income from sponsors and the media which can be invested in areas such as grass roots sport, stadia or elite athlete development.



5

By sponsoring the event, sponsors increase their publicity and brand awareness which they hope will boost sales of their products and services, increasing their profit by more than the cost of sponsorship.



Explain the relationship between sport, media and sponsorship. [3]

The relationship is known as the golden triangle.^[1] Sport receives money from sponsors and from the media.^[1] Sponsors can showcase their brand to increase their profit via the media.^[1] The media gain money from subscribers who want to watch the sport on television.^[1]

EXAMINATION PRACTICE

1. Suggest why the percentage of active adults typically increases between March and October each year. [1]
2. Identify **two** social groups that have typically lower levels of participation in sport compared to the national averages. [2]
3. The charts in Figures 1 and 2 show the levels of disposable income and the levels of physical activity across the UK.

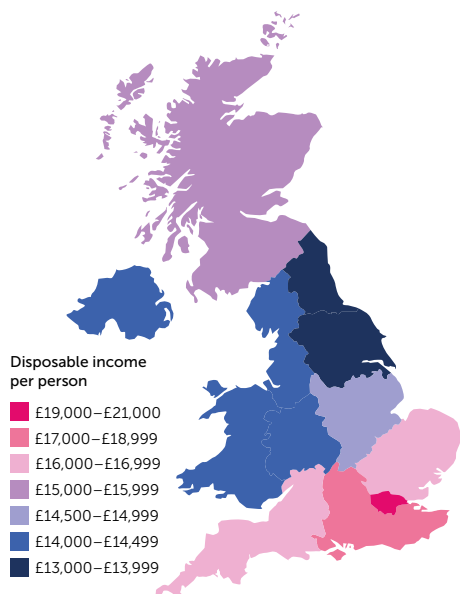


Figure 1

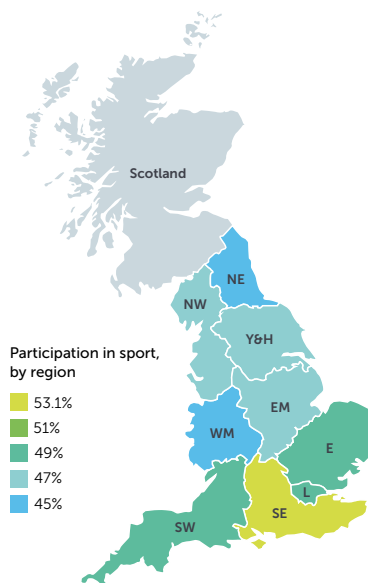


Figure 2

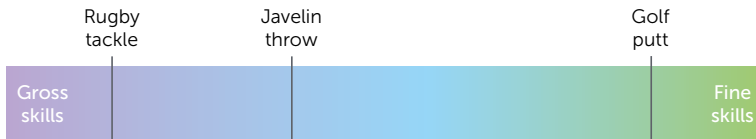
- (a) From the information provided in Figures 1 and 2, explain the relationship between disposable income and levels of activity. [1]
 - (b) Estimate the level of activity in Scotland as a percentage. [1]
 - (c) Calculate the percentage difference between the most and least active areas of the UK. [1]
 - (d) Analyse **two** ways that local authorities can increase the level of participation in sports by adults. [6]
4. Which **one** of the following does not form part of the golden triangle? [1]
 - A – Commercialisation
 - B – Media
 - C – Sponsorship
 - D – Sport

CHARACTERISTICS OF SKILFUL MOVEMENT

Skilful movement is characterised by fluent and coordinated action which is efficient, technically accurate and aesthetically pleasing.

Motor skills

Motor skills are actions that involve movements of the body. They are learned and all lie on a **muscular continuum**:



You can place a skill anywhere on a continua as long as you can justify it.

At one end, **gross skills** use large muscles or muscle groups to perform big, strong, powerful movements. At the other, **fine skills** are responsible for small and precise movement, requiring high levels of accuracy and coordination. Fine skills involve the use of a small group of muscles.

The characteristics of skilful movement

Efficiency

Some performers act with effortless **efficiency**, wasting very little energy in their common actions, for example hockey players passing the ball between each other.



Coordination

Many skills can be combined into a longer movement in a display of **coordination**, making sure that one action is linked with the next, and that movement involving any equipment, such as balls, rackets and approaching hurdles is synchronised.



Fluency

Skills can be combined into one fluid and natural-looking movement, for example catching a ball on your foot and moving smoothly into a dribble, which turns **fluently** into a shot on goal.



Pre-determination

Some skills have **pre-determined** movements and expected outcomes, for example, knowing where to place a rugby ball in a conversion kick, where on the court to serve a squash ball, or a predetermined ice-skating routine.



Aesthetic

An **aesthetic** skill is one that looks good when performed. A stylish and well-executed BMX or freestyle skiing trick has strong aesthetics.

THE USE OF DATA

Specification coverage

The use of data analysis skills are spread across the components and topics.

Requirements

Demonstrate an understanding of how data are collected – both qualitative and quantitative

Present data, including graphs and tables.

Analyse and evaluate data, including graphs and tables.

ANALYSIS AND EVALUATION OF DATA

Once data has been collected, it can be analysed, graphed and then interpreted. An evaluation of the data can more easily be made after this process.

Interpreting tabular data

The data in the table below shows the number of medals won by the GBR team in the Summer Olympics since 1992. Without some analysis, data tables can be difficult to interpret.

Medals	Barcelona 1992	Atlanta 1996	Sydney 2000	Athens 2004	Beijing 2008	London 2012	Rio 2016	Tokyo 2021
Gold	5	1	11	9	19	29	27	22
Silver	3	8	10	9	13	18	23	20
Bronze	12	6	7	12	19	18	17	22

This data could be analysed, for example, by sorting or by finding the totals for each year:

Total	20	15	28	30	51	65	67	64
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Figure 1: GBR Summer Olympic medals since 1992

1. From the table of data presented in Figure 1, identify the most successful year for the GBR team in terms of gold medals won. [1]

2012.^[1]

Interpreting graphical data

Bar charts

Data presented graphically is often clearer and easier to extract useful information from.

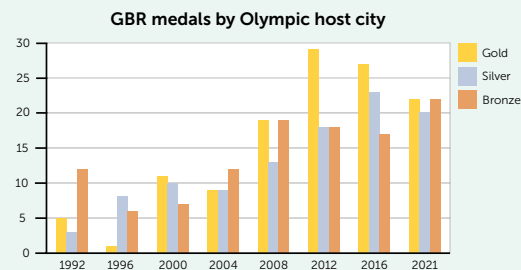


Figure 2

2. Look at the bar chart presented in Figure 2. Suggest **two** possible reasons why the performance of GBR athletes improved after 1996. [2]

(National Lottery) funding was diverted into elite sport in 1996.^[1] A new high-performance system spread across UK sports, putting the concept of marginal gains at the heart of training.^[1] New, raw talent was better nurtured.^[1] Team spirit increased in Beijing 2008 and the winning feeling has increased confidence and pride in athletes and their performance directors.^[1]

NON-EXAM ASSESSMENT (NEA)

Practical performance in
physical activity and sport

Information about the non-examined assessment:

Assessed by teachers

80 marks

40% of the qualification grade

1. Practical performances – 30% of the total GCSE: 60 marks

The three activities that you choose must come from the lists below and should include:

- A team activity,
- An individual activity, **and**
- Any other activity of your choice

Team sports:

Acrobatic gymnastics, association football, badminton, basketball, camogie, cricket, dance, figure skating, futsal, Gaelic football, handball, hockey, hurling, ice hockey, inline roller hockey, lacrosse, netball, rowing, rugby league, rugby union, sailing, sculling, squash, table tennis, tennis, volleyball, water polo.

Specialist sports: blind cricket, goalball, powerchair football, table cricket, wheelchair basketball, wheelchair rugby.

Individual sports:

Amateur boxing, athletics, badminton, canoeing / kayaking (slalom or sprint), cycling, dance, diving, equestrian, figure skating, golf, gymnastics, rock climbing, sailing, sculling, skiing, snowboarding, squash, swimming, table tennis, tennis, trampoline, windsurfing.

Specialist sports: Boccia, polybat.

2. Analysis and evaluation of performance – 10% of the total GCSE: 20 marks

ANALYSIS AND EVALUATION OF PERFORMANCE (AEP)

You are required to demonstrate your ability to analyse and evaluate your own practical performance or that of a peer.

The AEP task

The AEP task needs to cover the following areas:

- 1 Evaluation** of the physical fitness, strengths and weaknesses of the performer, relating them to the tests for each component of fitness.
- 2 Analysis** of the relevance and importance of each component of fitness for the activity
- 3 Overview** of all of the key skills required for your chosen activity.
- 4 Assessment** of your own, or a peer's, strengths and weaknesses of the skills involved in the chosen activity.
- 5 Movement analysis** of a joint, type of movement or muscle function, including the identification of where the movement sits on the appropriate continuum.
- 6 Action plan** detailing how to improve an aspect of the performance such as a skills or component of fitness with relevant drills and practice. This should include a risk assessment, coaching points, application of SPOR And FITT, and SMART goal setting.

When completing this work, it is advised that you title each section to make it clear. For example, in the evaluation section, you are likely to title the following areas:

Results of fitness tests

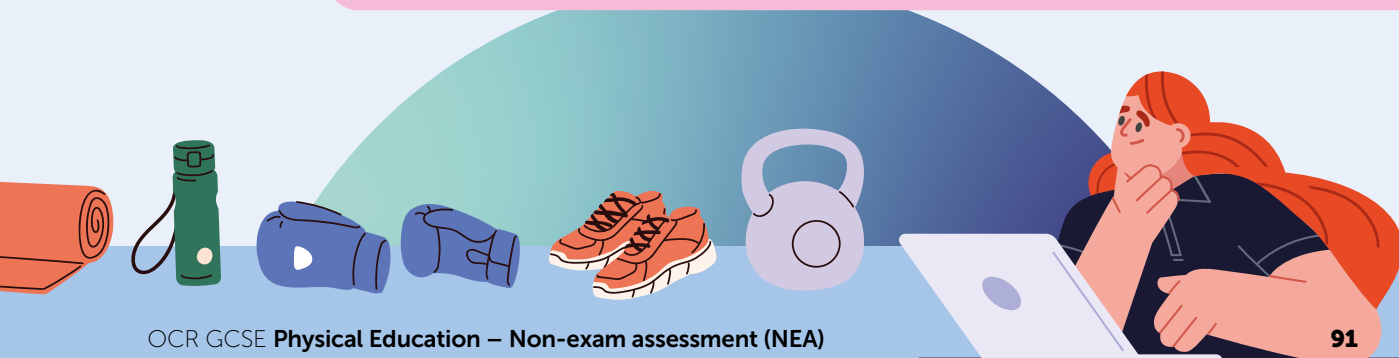
Assessment and comparison of results to normative values

Application to practical activity

Most students will type this section of their coursework. The action plan should be detailed but does not need to be physically carried out.

The fitness components and tests are listed on **pages 29 to 36** of this guide.

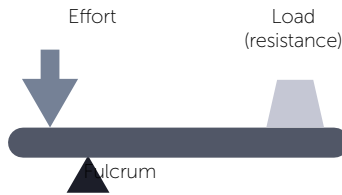
The skills and techniques are listed in the specification under your chosen activity criteria.



EXAMINATION PRACTICE ANSWERS

Topic 1.1

1. A – Femur. [1]
2. True. [1]
3. (a) A – Left atrium → left ventricle → right atrium → right ventricle. [1]
 (b) Aorta carries blood away from the heart to the body. Vena cava carries it back again. [1] The aorta carries oxygenated blood. The vena cava carries deoxygenated blood. [1] The aorta transports blood from the left ventricle. The vena cava transports blood into the right atrium. [1] The aorta carries blood at high pressure. The vena cava carries blood at much lower pressure. [1] The aorta has thick walls to withstand the pressure. The vena cava has thin walls. [1] [4]
4. Support [1], protection of vital organs by flat bones [1], movement [1], to provide a structural shape [1], provide points for muscular attachment [1], for mineral storage [1] and blood cell production. [1] [3]
5. (a) Ligaments are less elastic than tendons. [1] Ligaments connect bone to bone / tendons connects bone to muscle. [1] Ligaments provide support and stability to a joint whereas tendons are designed to move the bone at a joint. [1] [2]
 (b) Provides a cushion for the joint in the event of impact.[1] Prevents bones from rubbing together / prevents wear and tear on the bones, causing pain.[1] [1]
6. (a) Tricep. [1]
 (b) The latissimus dorsi acts as a stabiliser[1] in the shoulder joint[1] to prevent unintended movement / to assist the agonists to work effectively.[1] [2]
7. (a) Third class / class 3 lever. [1]
 (b) Diagram must be labelled. Accept load/resistance. [1] [2]



8. (a) (i) Plane – Sagittal. [1] Axis – Transverse. [1] [2]
 (ii) Plane – Transverse. [1] Axis – Longitudinal. [1] [2]
 (b) Extension. [1]
 (c) Effort arm is always shorter than resistance arm. / It has a short effort arm. / MA = effort arm / resistance (load). [1] Lever has low strength to effort ratio. [1] Lever is inefficient when considering strength. [1] 3rd class levers allow a load to be moved more quickly / over a greater distance. [1] Third class levers always have an MA of less than 1. [1] [2]
 (d) Movement of the limbs (arms) away from the midline of the body. [1] Movement of the arms to the side [1] for balance. [1]
9. (a) C – Increased heart rate. [1]
 (b) This question should be marked in accordance with the levels-based mark scheme on **page 99**. [6]

Indicative content may include:

Knowledge of the effects on the body of long-term fitness e.g:

Bone density, hypertrophy of muscle, muscular strength, muscular endurance, resistance to fatigue, hypertrophy of the heart, resting heart rate and resting stroke volume / lower resting heart rate (bradycardia), cardiac output increases, rate of recovery fastens, aerobic capacity increases, respiratory muscles strengthen, tidal volume and minute volume during exercise, capillarisation, body fat will be reduced over time.

Application to an ice skater e.g:

- Reducing body fat / weight / increased bone density will help with lifts, jumps and lessen the impact on landing.
- Increased muscle mass / muscular strength in the legs will help with explosive power for jumps.
- Suppleness and flexibility can help with the spin positions required.
- Increased stamina can help a skater avoid fatigue before the end of their performance.

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EXAMINATION TIPS

When you practice examination questions, work out your approximate grade using the following table. This table has been produced using a rounded average of past examination series for this GCSE. Be aware that boundaries vary by a few percentage points either side of those shown.

Grade	9	8	7	6	5	4	3	2	1	0
Boundary	78%	73%	69%	64%	58%	52%	38%	25%	12%	0%

1. Read questions carefully. This includes any information such as tables, diagrams and graphs.
2. Remember to cross out any work that you do not want to be marked.
3. Answer the question that is there, rather than the one you think should be there. In particular, make sure that your answer matches the command word in the question. For example, you need to recall something accurately in a **describe** question but not say why it happens. However, you do need to say why something happens in an **explain** question.
4. Use connective words in your answers, for example, 'because', 'such as', or 'so that' as these force you to give an explanation for your answer, commonly gaining an additional mark in questions worth two or more marks.
5. Ensure that your responses have the appropriate amount of depth based on the number of marks provided and avoid repeating the same point in a variety of ways.
6. Ensure any sporting examples are relevant to the context of the question.
7. In longer answer questions involving levels of response, be sure to include AO1 (knowledge and understanding), AO2 (application of knowledge) and AO3 (analysis and / or evaluation). Give detailed reasons and focus on the impact in AO3. These questions also commonly include knowledge from both sections of the theory specification.
8. Both the examination papers will include multiple-choice questions (MCQs). Make sure you neatly tick the answer you want to be marked. If you change your mind, put a cross in the box (from corner to corner). If you change your mind back again, put a circle neatly around the box.
9. Show all the relevant working out in calculations. If you go wrong somewhere, you may still be awarded some marks if the working out is there. It is also much easier to check your answers if you can see your working out. Remember to give units when asked to do so.
10. Plot the points on graphs accurately and use a ruler. Ensure that you are drawing the type of graph asked for in the questions. Do not confuse bar charts with line graphs. Label all lever diagrams, graphs and charts fully.
11. Write legibly! Candidates often lose marks where examiners are unable to read their handwriting.
12. Write your answers on the lines provided. The lines are usually a good indicator of the length of the expected answer. If you need more space, use additional paper to complete this, clearly numbering the response with the question number. Make it clear that you have used extra paper in the answer space provided.

Good luck!

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These guides are everything you need to ace your exams and beam with pride. Each topic is laid out in a beautifully illustrated format that is clear, approachable and as concise and simple as possible.

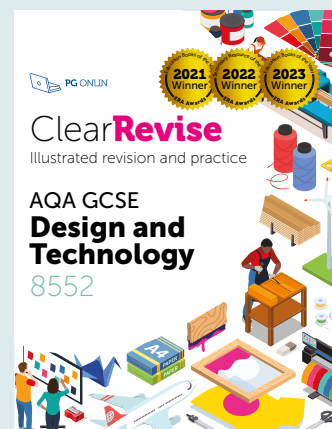
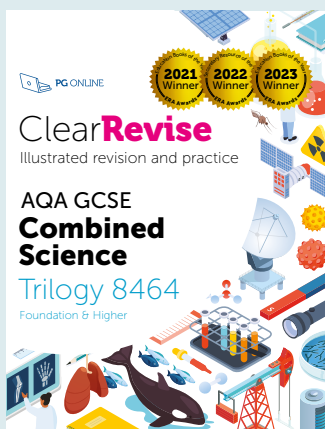
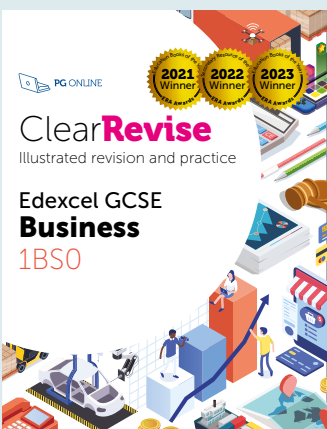
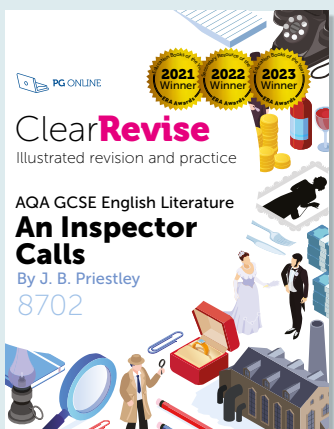
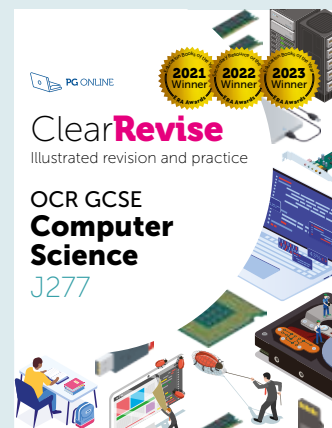
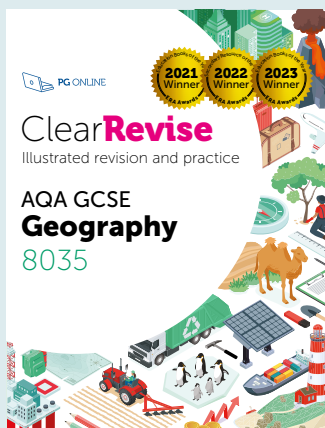
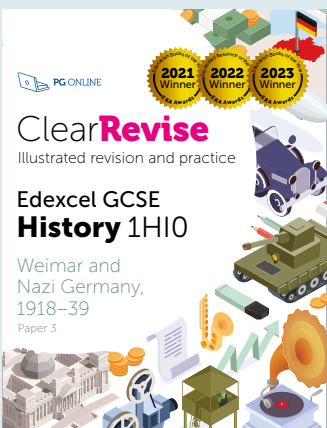
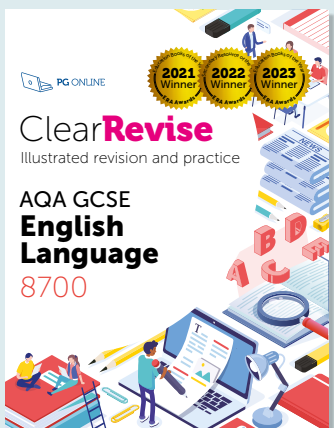
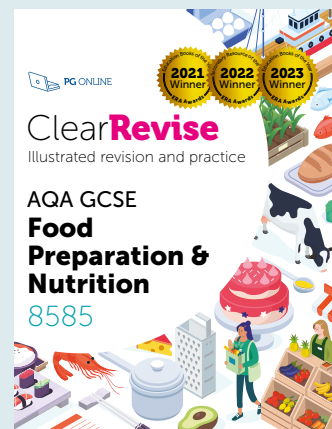
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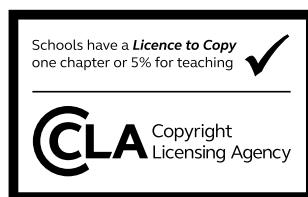
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