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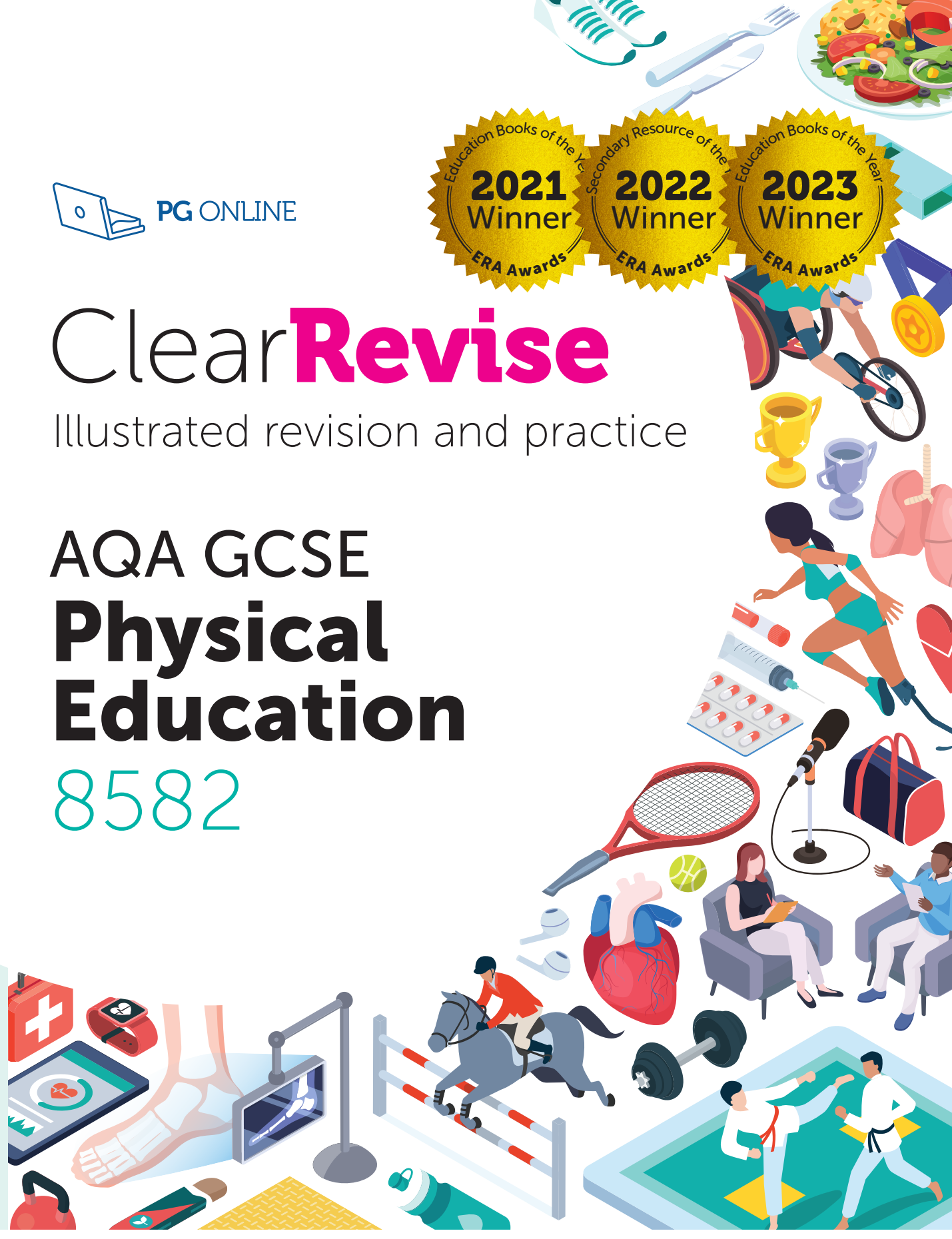

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PREFACE

Absolute clarity! That's the aim.

This is 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. 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 responses. You can check your answers against those given at the end of the book.

ACKNOWLEDGMENTS

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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.
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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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Practical performance in physical activity and sport

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 117. 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

The human body and movement in physical activity and sport

Information about Paper 1

Mandatory written exam: 1 hour 15 minutes
Externally assessed.
78 marks
All questions are mandatory
30% of the qualification grade
Calculators are permitted in this examination.

Specification coverage

Applied anatomy and physiology, movement analysis, physical training, and the use of data.

The content for this assessment will be drawn from topics 3.1.1 to 3.1.4 of the specification.

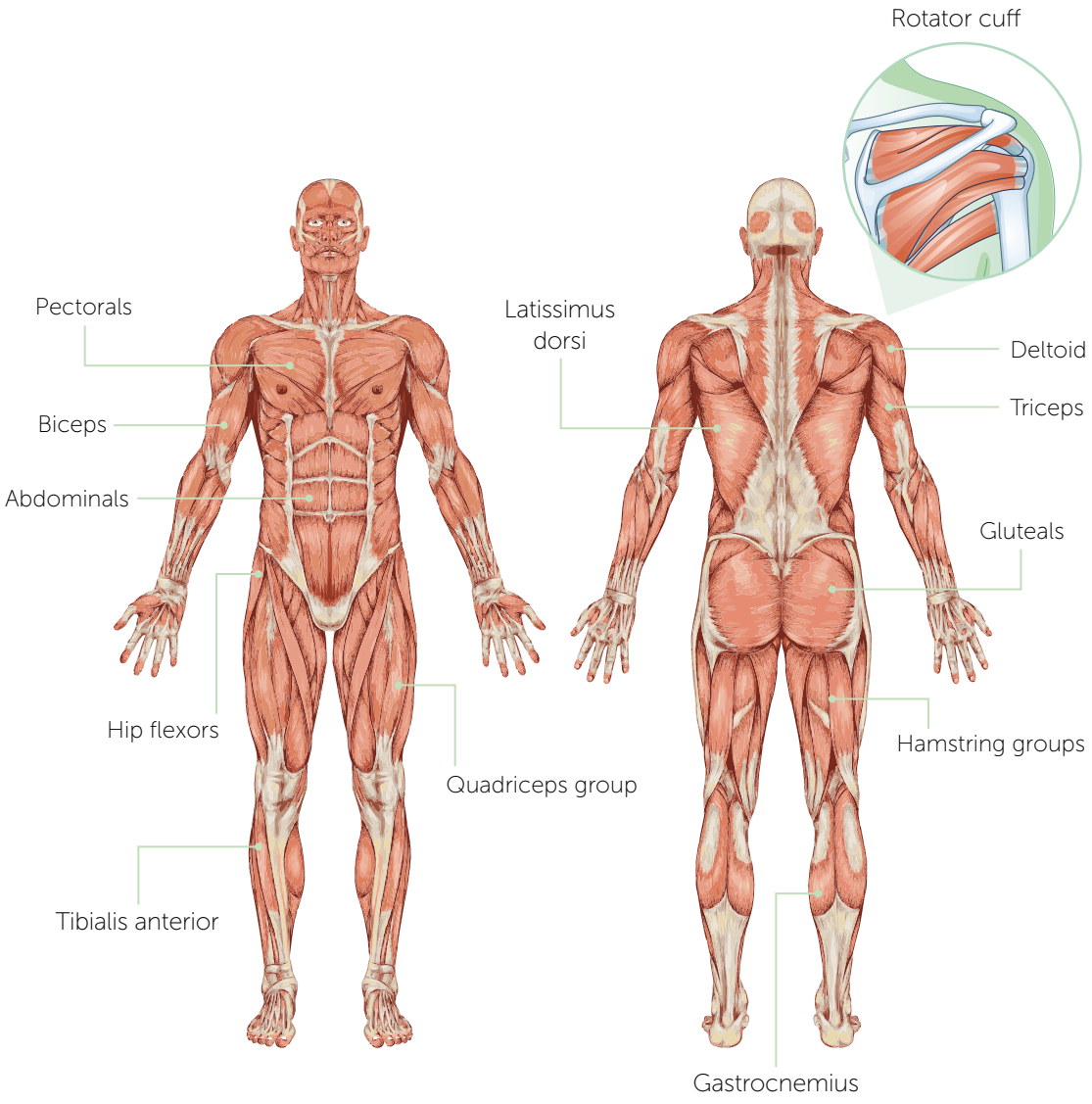
Questions

The paper will consist of a mixture of multiple choice/objective test questions, short answer questions and extended answer questions.

MUSCLES AND JOINTS

There are about 600 **muscles** in the human body. **Tendons** are strong tissue used to connect muscles to bones.

Major muscles and muscle groups



1. Name **one** muscle group that causes movement at the knee. [1]

1. Hamstrings,[1] quadriceps.[1]

HOW JOINTS DIFFER IN DESIGN TO ALLOW CERTAIN TYPES OF MOVEMENT

The following types of movement are linked to specific types of joint, which enables that movement to take place.

Flexion and extension

Flexion and **extension** occurs at the hips and shoulders, and at hinge joints such the **elbows** and **knees**, as the angle of the joint closes and opens.

Flexion in the upward phase of a bicep curl

Extension with a backhand shot in tennis

Plantar flexion and dorsiflexion

These are specialist terms for flexion and extension at the **ankle**. **Plantar flexion** means to point the toes. **Dorsiflexion** means to lift the end of the foot at the toes, pivoting at the heel.

Plantar flexion in ballet

Dorsiflexion in long jump

Abduction and adduction

Abduction and **adduction** at the shoulder means to take your arms away (to abduct) from the body, or bringing them back towards (to adduct) the midline of the body. A star jump uses both abduction and adduction.

Abduction in butterfly swimming

Adduction in pull-ups on the rings

Rotation and circumduction

Rotation of the shoulder creates a twisting of the bone along its long axis, such as when you rotate your palm up towards the sky.

Circumduction (think circumference) means a circular movement of a limb around the ball and socket joint.

The two movements are often combined.

Shoulder circumduction in canoeing

Shoulder rotation on the pommel horse

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.)

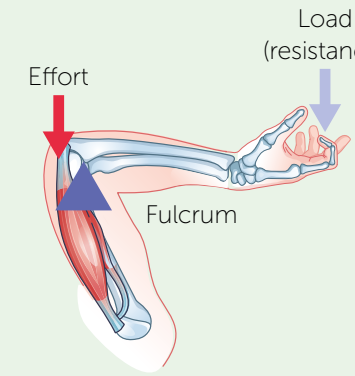
A **load** (or **resistance**) being moved. (In the body this relates to bodyweight and any additional load being carried.)

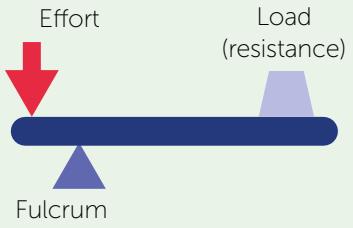
The **effort** or force required to move the load. (Muscular effort.)

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.





An Internazionale player throws the ball in during a UEFA Champions League match.

1. Identify the type of lever system working at the knee in the upward phase of a squat. [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]

1. Third class lever.[1]

2. Second class lever.[1]

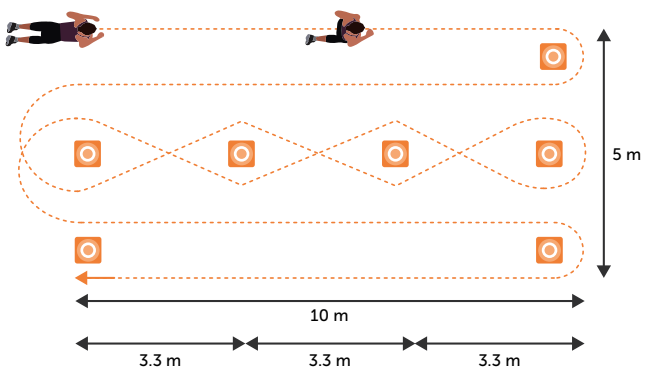
FLE 123 is a useful mnemonic to remember the lever classes.
A class 1 has the *Fulcrum* in the middle.
A class 2 has the *Load* in the middle
A class 3 has the *Effort* in the middle.

MEASURING THE COMPONENTS OF FITNESS

There are various specific tests that can be used to measure different aspects of fitness. Each one is carried out and organised differently.

Illinois Agility Test — Agility

This test measures agility. It requires **eight cones**, carefully arranged at measured distances apart as shown in the diagram. The performer starts face down and runs against a **stopwatch timer** to the end. The activity is measured in seconds.



Try out each test where you have the right equipment and measure your performance against national standards and average scores available online.

Stork Stand Test — Balance

The Stork Stand Test requires a **stopwatch** and an **assistant**.

Time is recorded in seconds.

See page 37 for national ratings.

1. Start from a balanced position on two feet.
2. Place hands on hips.
3. Place one foot on the inside of the knee of the standing leg.
4. Lift the heel of the standing leg when stopwatch is started.
5. Stop the timer when balance is lost or when the foot moves from the inside leg.

Evaluate the appropriateness of the Stork Stand Test for a gymnast and a cyclist. [6]

The stork stand test is a maximal test of static balance.[✓] A gymnast needs excellent static balance which this measures.[✓] Gymnasts often need to balance on one leg which is also measured in this test[✓] A cyclist requires good balance but not on their own feet[✓] and would not replicate the movements of their sport so closely[✓] so the test results may not be such a reliable measure of performance.[✓] The test could be useful to measure improvement in balance for both athletes.[✓] Overall, the test would be better for identifying strengths and weaknesses in a gymnast's balance than a cyclist's.[✓] *This question should be marked in according with the levels-based mark scheme on page 117.*

HIGH ALTITUDE TRAINING

High altitude training is carried out over 2000 metres above sea level where the concentration of oxygen in the air is reduced. The body compensates by adapting, making more red blood cells to carry more oxygen.

Benefits of altitude training

- More red blood cells are produced which can carry more oxygen to the working muscles when training or playing sports at lower altitudes. This can help athletes perform more efficiently and for longer. They will be able to deliver oxygen more effectively, delay fatigue and work aerobically at higher intensities, which can provide a competitive advantage.
- Cardiovascular endurance is improved.
- Aerobic capacity is increased for a few weeks.
- Gaseous exchange becomes faster, enabling an athlete to work at a higher rate for a longer period.
- Benefits are maximised when performances are subsequently done at sea level where oxygen levels are highest.

Limitations of altitude training

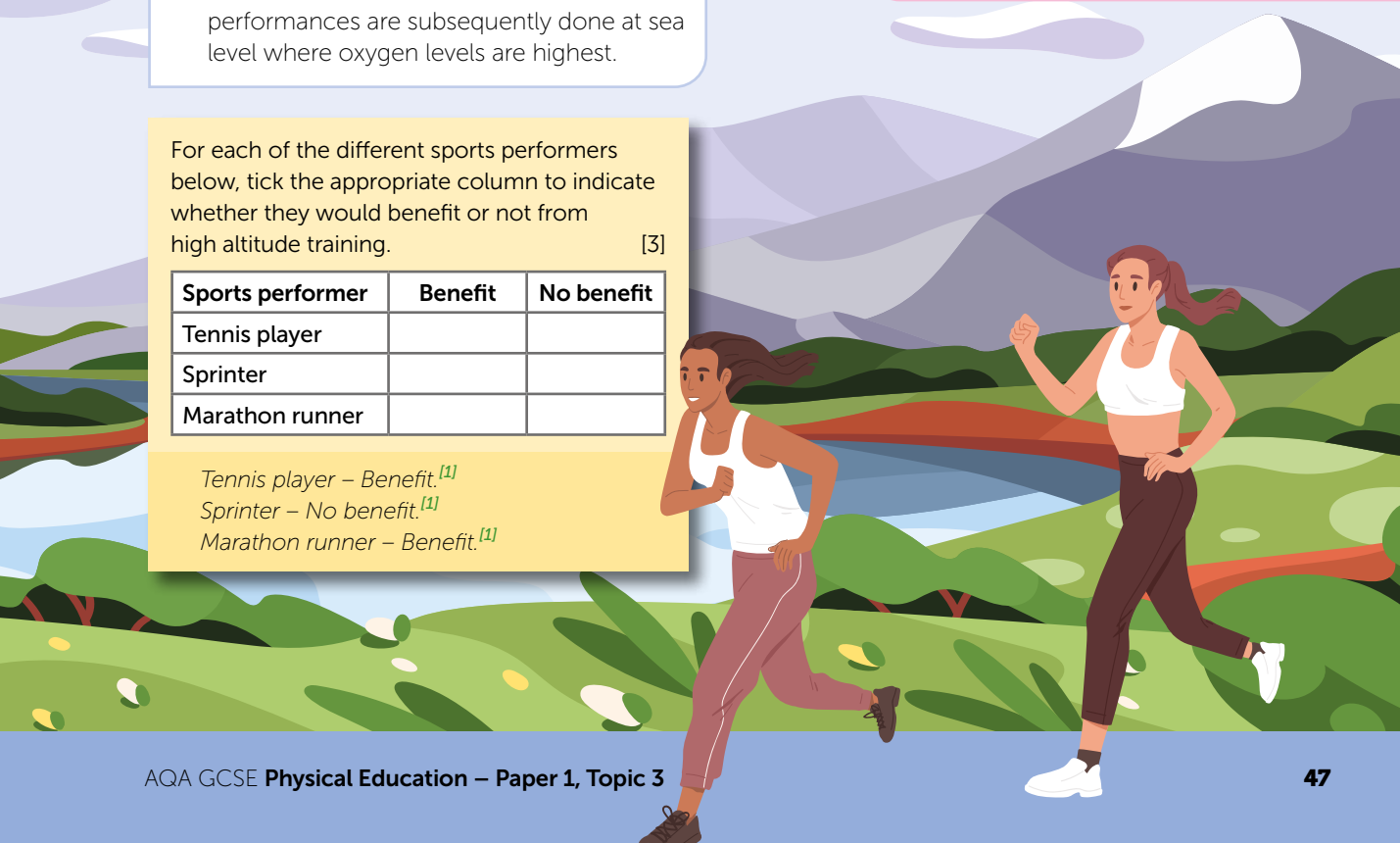
- Detraining (**reversibility**) can occur as training sessions are more difficult with the lack of oxygen so athletes may not be able to train for as long or as intensely.
- Altitude sickness may prevent training for a few days until the athlete has adapted.
- Athletes may be affected by psychological issues associated with home sickness or unfamiliar surroundings which may cause them to underperfom, losing fitness.
- Benefits are short-lived.

Since altitude training is related to oxygen levels, it has little benefit on anaerobic performance.

For each of the different sports performers below, tick the appropriate column to indicate whether they would benefit or not from high altitude training. [3]

Sports performer	Benefit	No benefit
Tennis player		
Sprinter		
Marathon runner		

Tennis player – Benefit.[1]
Sprinter – No benefit.[1]
Marathon runner – Benefit.[1]



PRESENTING DATA

Data can be presented in graphical formats to show patterns more clearly.

Presenting data in tables

The data collected from the sports club survey can be tallied and averaged in a **table**:

Exercise hours per week	Frequency	Average resting heart rate
0	3	78
1	16	75
2	**24**	**72**
3	17	68
4	12	69
5	10	66
6	8	65
7	3	63
8	5	61
9	2	57

24 people exercised for 2 hours per week

Plotting basic bar charts and line graphs

Using the data in the table above, a **bar chart** (figure 1) can be plotted to show the number of people that exercise for 0–9 hours per week. A **line graph** (figure 2) can be plotted to show the average heart rate for club members for each level of exercise.

Figure 1: *Bar chart*

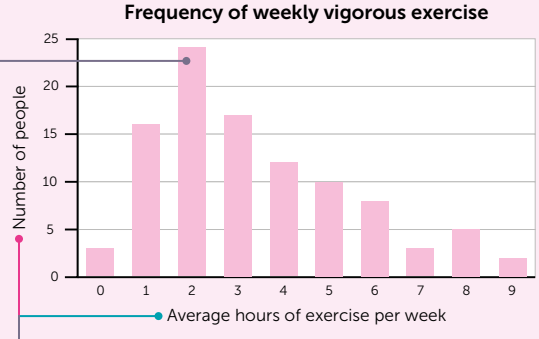
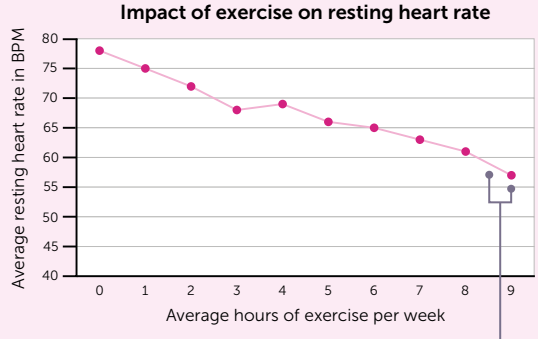


Figure 2: *Line graph*



Always label the **x** and **y** axes on charts and graphs for full marks. Axis labels should include the units, for example: people, BPM or weeks.

Mark each point on a line graph, then join the markers.

Look at the line graph in Figure 2. Suggest the relationship between resting heart rate and hours of exercise in this sample of people. [1]

Those who did greater amounts of weekly exercise had lower resting heart rates.[1]

TOPICS FOR PAPER 2

Socio-cultural influences and well-being in physical activity and sport

Information about Paper 2

Mandatory written exam: 1 hour 15 minutes
Externally assessed.
78 marks
All questions are mandatory
30% of the qualification grade
Calculators are permitted in this examination.

Specification coverage

Sports psychology, socio-cultural influences, health, fitness and well-being, and the use of data.

The content for this assessment will be drawn from topics 3.2.1 to 3.2.3 of the specification.

Questions

The paper will consist of a mixture of multiple choice/objective test questions, short answer questions and extended answer questions.

TYPES OF SPONSORSHIP AND THE MEDIA

Sponsorship is the provision of funds or other forms of support to an individual or event for some commercial return, i.e. profit. Sponsorship can be provided in a variety of ways and is advertised and promoted through the media.

You may be required to simply state the types of sponsorship or the types of media.

However, be careful as you may be required to give more of a description (characteristics) or even an explanation (purposes / reasons).

Types of sponsorship

Financial (Giving money or financial assistance.)

London Marathon has been part funded by sponsor Lucozade Sport.

Equipment (E.g. golf clubs or cricket bats.)

A tennis player with sponsored equipment.

Clothing, **footwear** and **branded kit**.

England's Rugby kit has been sponsored by Umbro and O_2.

Facilities (Naming rights for stadia.)

Emirates stadium of Arsenal FC, London.

Types of media

Television

Social media

(Printed) Press

Radio

Internet

1. State **three** types of sponsorship. [3]
2. Describe how **two** named types of media can be used to broadcast sport. [4]

1. *Any three from: Financial,[1] clothing / footwear,[1] equipment,[1] or facilities.[1]*
2. *Any two named media types with explanation. Television[1] can be live or via a highlights programme.[1] Radio[1] can be free to air such as BBC 5 live.[1] Social media[1] accounts can be updated 24/7 to provide information, facts and opinions.[1] Internet.[1] Fan and club websites can update the public on all matters relating to the sports club.[1]*

PROHIBITED METHODS (BLOOD DOPING)

Blood doping involves the use of techniques or substances to increase a performer's red blood cell (RBC) count.

The process of blood doping

1. Blood is removed from an athlete several weeks before competition.
2. The blood is frozen.
3. The body makes more red blood cells to replace the ones that have been removed.
4. 1–2 days before competition, the frozen blood is thawed and injected back into the performer, thus increasing their red blood cell count.
5. The performer now has more red blood cells which increases their oxygen carrying capacity and aerobic performance.

! Note

Caution! Blood doping comes with many negative side effects: thickening of the blood (viscosity), potential infection, potential for heart attack, and an embolism (blockage of a blood vessel).

Suggest why cardiovascular endurance may be improved by using the prohibited method of blood doping.
Justify your answer with a sporting example. [4]

Cardiovascular endurance can only be improved with training as well.[1] Example: long-distance athletes.[1] Justification: Two from: to increase red blood cell count[1] so their oxygen carrying capacity in the blood in increased.[1] Improves the efficiency of the aerobic system.[1] Maintains performance without fatigue / excess lactic acid.[1]

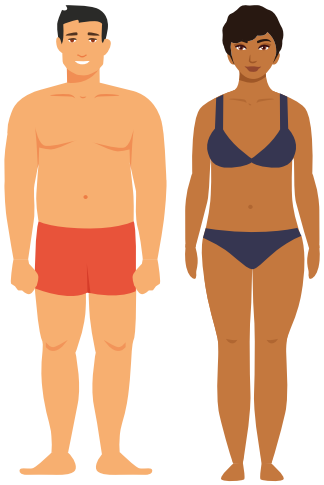
SOMATOTYPES

Somatotyping is a method of classifying body type. A sport or sporting position (e.g. prop forward or winger) may be more suited to an individual with a particular type.

Endomorph

An **endomorph** is characterised by a **pear-shaped body**, with **some fatness**. Individuals commonly have **wide hips** and **narrow shoulders**. Sports or positions they are most suited to include discus, shot put, power lifting and forward rugby positions.

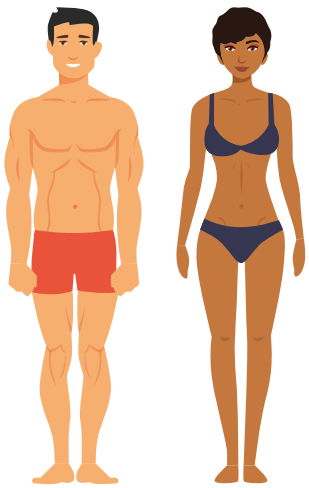
Endomorphs use their bulk to their advantage, to push forwards or to generate power. A higher fat content means they would find endurance sports more difficult, and less height makes racket sports, netball, volleyball and basketball more challenging.



Mesomorph

A **mesomorph** is characterised by a **muscular appearance**. Individuals typically have **wide shoulders** and **narrow hips**. They are ideally suited to football, swimming, sprinting and backline rugby positions.

Mesomorphs have powerful, athletic builds, providing bursts of anaerobic power combined with aerobic endurance. High muscle mass helps them to overcome opponents and withstand tackles, for example, in rugby. A wedge-shaped body helps them to pump their arms faster to generate a faster leg movement, creating speed.



NON-EXAM ASSESSMENT (NEA)

Practical performance in physical activity and sport

Information about the non-examined assessment:

Assessed by teachers
100 marks
40% of the qualification grade

1. Performance assessment (practical performance) – 75 marks

For each of three sporting activities, students will be assessed in skills in progressive drills (10 marks per activity) and in the full context (15 marks per activity).

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. Performance analysis assessment (analysis and evaluation) – 25 marks

Students will be assessed on their analysis (15 marks) and evaluation (10 marks) of performance to bring about improvement in one activity.

PERFORMANCE ANALYSIS ASSESSMENT: ANALYSIS AND EVALUATION

Your analysis and evaluation coursework can be written (typed) or completed as an interview.

Most students will type their coursework and analyse their own performance in an activity they have chosen to show practically. However, it can be written about another person who has performed in a sport that is included in the list in the specification.

Analysis: Strengths and weaknesses

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

Fitness component: Strength
Fitness component: Weakness
Skill or technique: Strength
Skill or technique: Weakness

For each strength and / or weakness, start off by making it clear what it is, for example *"My fitness weakness is …"*.

You can then produce a short paragraph that explains why that **fitness component** is relevant to your chosen sporting activity.

The rest, and the biggest part, of each strength (or weakness) is about justifying why you have highlighted that strength (or weakness) based on **two** recent performances. This should be written in **past tense** as the performances have already happened. For your fitness strength for example, you should explain why it was a fitness strength in **two** recent performances. If you only refer to one recent performance, you will not gain as high a mark.

For each strength or weakness, think about:

- Who were you competing against?
- What was happening in the performance?
- When was the strength or weakness revealed?
- Why was it a strength or a weakness? What impact did it have on the performance?

Consider the **impact** that the strength or weakness had on you as a performer and on your overall performance.

The fitness components are listed on **pages 30 to 31** of this guide.

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

! Note

For each strength and weakness, the recent performances you refer to can be different or could come from the same performances – it's up to you.

EXAMINATION PRACTICE ANSWERS

Paper 1, Topic 1

01 A – Femur. [1]

02 D – The movement of the arm away from the midline of the body. [1]

03 B – Right atrium → right ventricle → left atrium → left ventricle. [1]

04 C – Increased heart rate. [1]

05 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]

06.1 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]

06.2 Small fluid filled sacs used to cushion parts of a joint / reduce friction between moving parts within the joint. [1]

07.1 An isotonic concentric contraction [1] of the tricep. [1] Do not accept isotonic without concentric. [2]

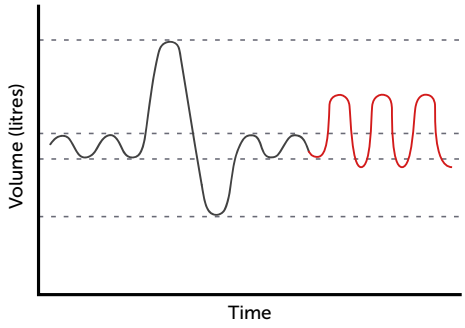
07.2 The muscles are contracting but not changing length / there is no movement created by the contracting muscles [1] as the position is/forces are constant. [1] [2]

07.3 Example responses may include a handstand, hold in a deadlift, hold at the top of a pull-up, crucifix in gymnastics rings or pushing in a scrum. Award one mark for any suitable answer. [1]

08.1 Muscles are attached to bones by tendons. [1] When muscles contract, they pull on the tendon, which moves the bone. [1] Muscles work in antagonistic pairs. [1] As one contracts, the other relaxes. [1] Bones create lever systems which can be moved. [1] [3]

08.2 X: Tidal volume (mL) [1], Y: Residual volume (mL).[1] [2]

08.3 [2]



08.4 Cardiac output = stroke volume x heart rate
0.07 x 170 = 11.9 litres. [1] Award 1 additional mark for correct conversion to litres. [2]

08.5 Pectoral (muscles) [1] / sternocleidomastoid [1]. [1]

08.6 Diastole means that the muscle of the heart chambers relaxes to enable filling.[1] Systole means that they are contracting / emptying / ejecting the blood (pumping).[1] [2]

09 This question should be marked in accordance with the levels-based mark scheme on **page 117**. [6]

Indicative content may include:

AO1: Knowledge of the effects on the body of long-term fitness e.g:

- Body fat will be reduced over time.
- Weight may be reduced.
- Improved muscle strength.
- Improved muscular endurance.
- Improved speed.
- Improved suppleness / flexibility.
- Improved stamina.
- Increase in the size of the heart (hypertrophy).
- Lower resting heart rate (bradycardia).

LEVELS-BASED MARK SCHEME FOR EXTENDED RESPONSE QUESTIONS

What are extended response questions?

Extended response questions are usually worth 6 or 9 marks. These questions are likely to have command words such as 'compare', 'explain' or 'evaluate'. You need to write in continuous **prose** when you answer one of these questions. This means you must write in full sentences (rather than in bullet points), organised into paragraphs if necessary.

You may need to bring together skills, knowledge and understanding from two or more areas of the specification. To gain full marks, your answer needs to be logically organised, with ideas linked to give a sustained line of reasoning.

Marking

Calculations are **not** marked using 'levels of response' mark schemes, but written answers are marked this way. Examiners look for relevant points (indicative content) but they also use a best fit approach. This is based on your answer's overall quality and its fit to the descriptors for each level.

Example level descriptors

Level descriptors vary, depending on the question being asked. Level 3 is the highest level and Level 1 is the lowest level. No marks are awarded for an answer with no relevant content.
The table gives examples of the typical features that examiners are asked to look for.

Level	6 Marks	9 Marks	Level descriptors
3	5–6	7–9	The answer is detailed, accurate and clear. A range of relevant points are linked logically. Application of knowledge to the scenario is appropriate. Most relevant data is used, if provided. Explanations show comprehensive understanding. A conclusion is well-reasoned, supported by a range of correct reasons and an appropriate use of terminology.
2	3–4	4–6	The answer is mostly detailed but not always clear. It includes some relevant points with an attempt at linking them logically. Some relevant data is used (if provided). Some logical explanation is provided. A conclusion is given that may not fully match the reasoning made. Terminology is used on occasions.
1	1–2	1–3	Relevant points are made. They are not logically linked and may be unclear. Little or no data is used. Only simple descriptions are made. If a conclusion is given, it may not match the reasoning given in the answer. Terminology is not used or is not appropriate.
0	0	0	No response or nothing worthy of credit.

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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	77%	72%	67%	61%	57%	49%	37%	25%	13%	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. In questions where the command word is **discuss**, remember to give both sides of the argument.
6. In longer answer **analyse** or **evaluate** questions (6 or 9 marks), 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.
7. Both the examination papers will include multiple-choice questions (MCQs). Make sure you neatly fill in the circle of 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.
8. 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.
9. 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 - e.g. levers must have the symbols and the words - i.e. fulcrum and triangle.
10. Try not to confuse the pathway of air in the respiratory system with the process of gaseous exchange.
11. Write legibly! Candidates often lose marks where examiners are unable to read their handwriting.
12. Write your answers on the lines provided. 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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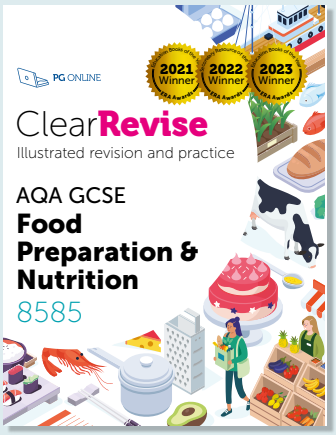

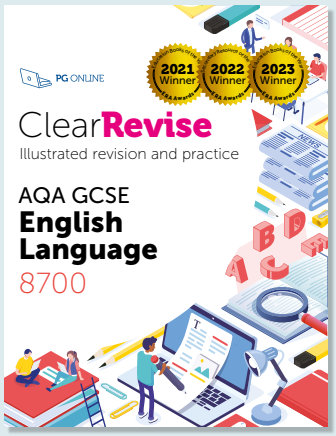

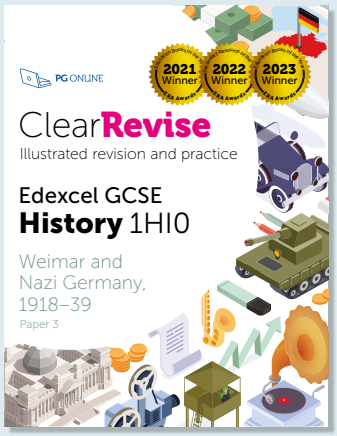

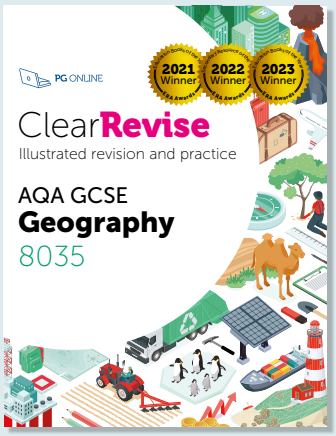

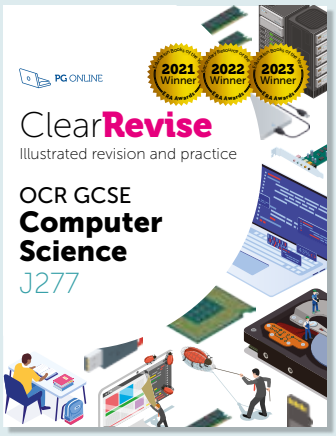

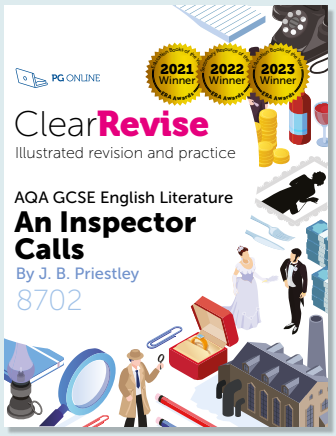

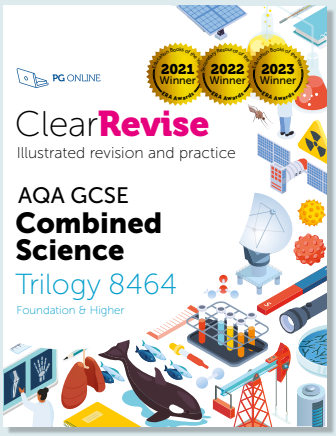

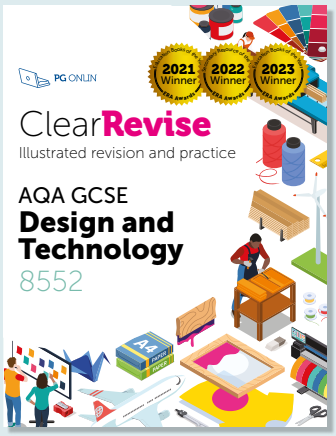

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