SUBJECT:- GCSE PE PAPER:- MOCK EXAM DATE:- 10TH NOV 2025

TOPICS TO COVER

Applied Anatomy & Physiology:

Structure & Function of the musculoskeletal system

Structure & Function of the cardio-respiratory system

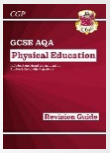
Aerobic & Anaerobic Exercise

Short & Long term effect of exercise

Movement Analysis:

Lever Systems

Planes & Axes of movement



Physical Training:

Relationship between health, fitness & exercise

Components of fitness

Principles of training

Optimising performance / Warm up & Cool down

Key knowledge to learn

Useful revision resources

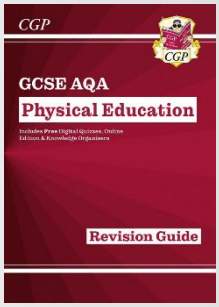
PE Classroom

Ever Learner

BBC Bite Size

Revision guide

Available from CGP books



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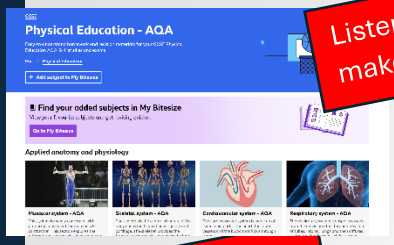
Exam technique tips

1. **Practise lots and lots of two and four-markers.**
   - These make up around half the paper
2. **Learn the command terms and what they mean.**
   - Identify / Explain / Evaluate / Analyse / Define / Describe / Justify / Discuss
3. **Use the E-I-O method when making examples.**
   - Example – Impact -Outcome
4. **Know components of fitness', fitness testing' and methods of training inside out.**
   - Agility / Balance / CV Endurance / Coordination / Flexibility / Muscular Endurance / Power / Reaction Time / Strength / Speed

Revision activity ideas



Listen to a podcast and make notes/mind maps.

Create flash cards on each of the components of the skeletal system.

Find pictures of a range of sporting skills and label the joints, joint actions, bones and muscles involved.

Create flash cards on each of the components of fitness

Create an annotated diagram of the heart.

Create flash card with key terms for aerobic and anaerobic exercise

Stop – Look – Cover

The pathway of blood in the cardiac cycle.

Create flashcards of key functions of the skeletal system.

Stop – Look – Cover

How the skeletal and muscular systems work together to create a range of sporting movements

Stop – Look – Cover

How joints differ in design to allow different movements

The EverLearner

Practice Exam Questions

0 1 Which **one** of these is an immediate effect of exercise?

A Improvement in muscular endurance ⬭

B Improvement in stamina ⬭

C Increase in aerobic fitness ⬭

D Increase in heart rate ⬭

[1 mark]

0 2 Which **one** of these performers relies most heavily on their cardiovascular endurance?

A 200m runner ⬭

B 10 000m runner ⬭

C Discus thrower ⬭

D Long jumper ⬭

[1 mark]

---

0 3 Which **one** of these shows how to calculate the mechanical advantage of a lever?

A Effort arm x weight (resistance) arm ⬭

B Effort arm ÷ weight (resistance) arm ⬭

C Effort arm + weight (resistance) arm ⬭

D Effort arm - weight (resistance) arm ⬭

[1 mark]

0 4 Which **one** of these describes flexibility?

A Changing direction at speed with control ⬭

B Combination of strength and speed ⬭

C Range of movement possible at a joint ⬭

D Supplying oxygen to the working muscles ⬭

[1 mark]

0 5 Which **one** of these causes plantar flexion at the ankle?

A Gastrocnemius ⬭

B Hamstrings ⬭

C Quadriceps ⬭

D Tibialis anterior ⬭

[1 mark]

0 6 Which bones are found at the shoulder joint?

A Femur and tibia ⬭

B Humerus and radius ⬭

C Scapula and humerus ⬭

D Tibia and fibula ⬭

[1 mark]

0 7 Which bones are found at the elbow joint?

A Femur and tibia ⬭

B Humerus and radius ⬭

C Scapula and humerus ⬭

D Tibia and fibula ⬭

[1 mark]

0 8 Using an example from a sport of your choice, identify the **two** types of movement that can occur at a hinge joint.

[4 marks]

1.

2.

0 9 Breathing enables gaseous exchange to occur at the alveoli.

Outline how **two** features of the alveoli assist in gaseous exchange.

[2 marks]

1.

2.

1 0 Flat bones provide a protective function within the body.

Name **two** flat bones **and**, using a sporting action of your choice, suggest how these bones provide protection during performance.

[4 marks]

1.

2.

1 1 **Figure 1** Shows a young athlete running. The running action involves the use of many joints within the body.

Figure 1

1 1 . 1 Identify the type of synovial joint working at the shoulder.

[1 mark]

1 1 . 2 Outline how **two** of the features of the shoulder joint aim to prevent injury occurring.

[2 marks]

1.

2.

1 1 . 3 Identify the plane **and** the axis about which the running action takes place.

[2 marks]

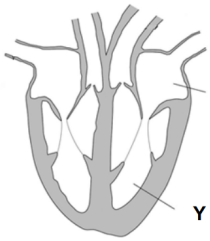
1 2 **Figure 2** shows a diagram of the heart.

Using **Figure 2**, identify the names of the chambers of the heart labelled **X** and **Y**.

[2 marks]

Figure 2

Right Left



X _____

Y _____

1 3 Define cardiac output.

[1 mark]

1 4 In 1999, Michael Johnson set a new world record for the 400m with a time of 43.18 seconds.

1 4 . 1 Justify why his performance was mainly aerobic or anaerobic.

[4 marks]

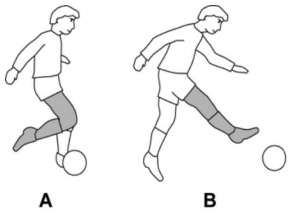
1 4 . 2 Athletes work at a percentage of maximal heart rate when training.

How is maximal heart rate calculated?

[1 mark]

1 5 **Figure 3** shows a person kicking a football.

Figure 3



1 5 . 1 Complete **Table 1** to show the joint action occurring at the knee from position **A** to position **B and** the agonist muscle group that causes this action.

[2 marks]

Table 1

Joint action	Agonist muscle group

1 5 . 2 The vertical jump test measures leg power.

Discuss the suitability of this test for a football player.

[3 marks]

1 6 Zack is a 16-year-old GCSE PE student. He is just about to play a game of basketball for his school team.

1 6 . 1 Zack's respiratory system will experience a number of changes before and during the game of basketball.

Define the terms tidal volume **and** residual volume.

[2 marks]

1 6 . 2 Outline what will happen to Zack's tidal volume **and** residual volume once exercise starts.

[2 marks]

1 6 . 3 **Figure 4** shows a basketball player jumping to execute a shot.

Figure 4

Draw the lever system which operates at the ankle joint in the space below. Label the fulcrum, effort and load.

[1 mark]

1 6 . 4 Discuss the appropriateness of continuous training for a games player like Zack.

[4 marks]

1 7 Training in sport is often structured into seasons.

Outline **two** reasons why performers take part in pre-season training.

[2 marks]

1.

2.

1 8 Fitness testing is often used as a motivational tool.

1 8 . 1 State **two** other reasons why fitness testing is carried out.

[2 marks]

1.

2.

1 8 . 2 The Illinois Agility Test is a maximal test that measures agility.

Describe how to carry out this test.

[2 marks]

1 9 Before carrying out a weight training session using heavy weights, Robert carries out an appropriate warm up, including stretching of the major muscles that will be used.

1 9 . 1 Explain what other factors Robert should consider to reduce the chance of injury occurring during the session.

[3 marks]

1 9 . 2 **Figure 5** shows a performer weight training. This movement is brought about by the muscular and skeletal systems working together.

Figure 5

Position **A** Position **B**

Explain how the muscles and bones work together to produce the movement from position **A** to position **B**.

[3 marks]

1 9 . 3 After performing any period of training, a cool down is important.

Identify **two** parts of an effective cool down.

[2 marks]

1. _____

2. _____

2 0 **Table 2** shows the heart rates recorded by a 20-year-old athlete. Heart rates have been recorded every two minutes.

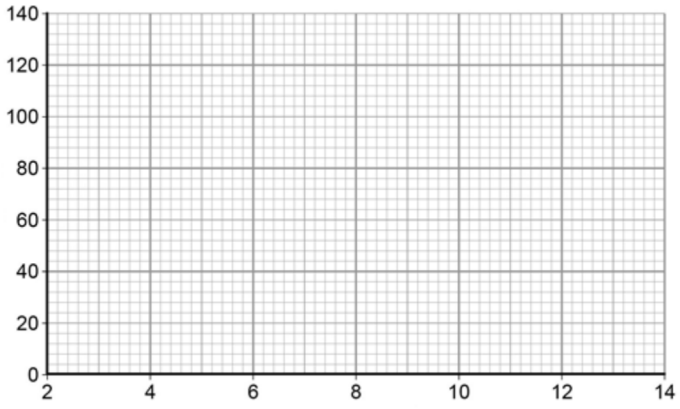
2 0 . 1 Plot the information shown in **Table 2** on the graph paper below to show how heart rate has changed over time. Label the axes and join up the points to make a line graph.

[3 marks]

Table 2 – heart rates recorded by a 20-year-old athlete

Time (minutes)	2	4	6	8	10	12	14
Heart rate (bpm)	80	85	110	115	115	115	85

Heart rates recorded by an athlete



2 0 . 2 Analyse the data shown in **Table 2**. Consider what has happened to the athlete between:

- 4 and 6 minutes
- 6 and 12 minutes.

[2 marks]

_____

_____

_____

_____

2 1 Using your knowledge of agility and reaction time, evaluate the importance of these components of fitness for performers in the 100m sprint.

[6 marks]

2 2 With reference to a named sporting activity, outline what plyometric and fartlek training are, and justify why they are both relevant to performers in that activity.

[9 marks]

Mark Scheme:

01 Which **one** of these is an immediate effect of exercise?

[1 mark]

Marks for this question: AO1 = 1

D

02 Which **one** of these performers relies most heavily on their cardiovascular endurance?

[1 mark]

Marks for this question: AO2 = 1

B

03 Which **one** of these shows how to calculate the mechanical advantage of a lever?

[1 mark]

Marks for this question: AO1 = 1

B

04 Which **one** of these describes flexibility?

[1 mark]

Marks for this question: AO1 = 1

C

05 Which **one** of these causes plantar flexion at the ankle?

[1 mark]

Marks for this question: AO1 = 1

A

A06 Which bones are found at the shoulder joint?

[1 mark]

Marks for this question: AO1 = 1

C

07 Which bones are found at the elbow joint?

[1 mark]

Marks for this question: AO1 = 1

B

08 Using an example from a sport of your choice, identify the **two** types of movement that can occur at a hinge joint.

[4 marks]

Marks for this question: AO1 = 2, AO2 = 2

AO1
- Flexion (1)
- Extension (1)

AO2
Answers must contain the movement and a relevant sporting example.

- (Flexion) lifting a hockey stick in preparation to strike the ball (1)
- (Extension) movement of the stick downwards to strike the ball (1)

Accept any suitable sporting example to identify movement. Answers must be relevant to either flexion or extension at a hinge joint.

Maximum 4 marks

09 Breathing enables gaseous exchange to occur at the alveoli.

Outline how **two** features of the alveoli assist in gaseous exchange.

[2 marks]

Marks for this question: AO1 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

- Large surface area of alveoli to allow larger volumes of gases / oxygen and carbon dioxide to move between the lungs and the bloodstream (1)
- Moist thin walls / one cell thick creating a short distance for diffusion / short diffusion pathway (1)
- Lots of capillaries around the alveoli so large area for gas exchange (1)
- Large blood supply to carry gases / oxygen and carbon dioxide (1)
- Movement of gas from high concentration to low concentration means there is a pressure gradient which allows diffusion to occur (1)

Accept any other suitable outline of how features of the alveoli assist in gaseous exchange. Answers must link the feature to how it assists in gaseous exchange.

Maximum 2 marks

10 Flat bones provide a protective function within the body.

Name **two** flat bones **and**, using a sporting action of your choice, suggest how these bones provide protection during performance.

[4 marks]

Marks for this question: AO1 = 2, AO2 = 2

Award **one** mark for each of the following points up to a maximum of four marks. Award up to a maximum of two AO1 marks and up to a maximum of two AO2 marks.

- Cranium (1 x AO1)
- Provides protection for the brain whilst heading a football / equivalent (1 x AO2)

- Sternum (1 x AO1)
- Provides protection to the heart when controlling a football on the chest / equivalent (1 x AO2)

- Scapula (1 x AO1)
- Provides protection for the shoulder joint during contact made with another player when catching a netball / equivalent (1 x AO2)

- Ribs (1 x AO1)
- Protect the lungs during any impact with a hockey ball / equivalent (1 x AO2)

- Pelvis (1 x AO1)
- Protects the reproductive system / bladder during contact made in a rugby tackle / equivalent (1 x AO2)

The bones can be credited for AO1 (up to a maximum of 2 marks) but the example must be applied to the protective role of the named bone during a sporting action for AO2 (up to a maximum of 2 marks). Alternative appropriate sporting actions can be credited.

Maximum 4 marks

11 **Figure 1** shows a young athlete running. The running action involves the use of many joints within the body.

11.1 Identify the type of synovial joint working at the shoulder.

[1 mark]

Marks for this question: AO1 = 1

Award **one** mark for each of the following points up to a maximum of one mark.

- Ball and socket (1)

Maximum 1 mark

11.2 Outline how **two** of the features of the shoulder joint aim to prevent injury occurring.

[2 marks]

Marks for this question: AO1 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

- Shape of the articular surface / bones – allows bones to fit together (1)
- Ligaments – attach bone to bone / restrict movement (1)
- Joint capsule / fibrous capsule – lined with synovial membrane / encloses / supports / joints (1)
- Synovial membrane – secretes synovial fluid (1)
- Synovial fluid – provides lubrication (1)
- Cartilage (hyaline / articular) – prevents friction / stops bones rubbing together (1)
- Bursae (sacks of fluid) – to reduce friction (1)

Accept any other suitable explanation of features of the shoulder joint that prevent injury occurring. Answers must refer to the shoulder joint.

Maximum 2 marks

11.3 Identify the plane **and** the axis about which the running action takes place.

[2 marks]

Marks for this question: AO2 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

- Sagittal (plane) (1)
- Transverse (axis) (1)

Maximum 2 marks

12 **Figure 2** shows a diagram of the heart.

Using **Figure 1**, identify the names of the chambers of the heart labelled **X** and **Y**.

[2 marks]

Marks for this question: AO1 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

X. (Left) atrium (1)
Y. (Left) ventricle (1)

Maximum 2 marks

13 Define cardiac output.

[1 mark]

Marks for this question: AO1 = 1

Award **one** mark for either of the following points up to a maximum of one mark.

- The amount of blood ejected / pumped from the heart in one minute (1)
- Stroke volume x heart rate (1)

Accept any other suitable definition of cardiac output.

Maximum 1 mark

14 In 1999, Michael Johnson set a new world record for the 400m with a time of 43.18 seconds.

14.1 Justify why his performance was mainly aerobic **or** anaerobic.

[4 marks]

Marks for this question: AO2 = 1, AO3 = 3

Award **one** mark for each of the following points up to a maximum of four marks.

AO2
- Anaerobic (1)

AO3 (sub-max 3 marks)
- 400m is a sprint event and all sprint events are anaerobic (1)
- Maximal intensity / effort and low duration means insufficient oxygen is available to work aerobically (1)
- Energy demand is higher than oxygen available, therefore anaerobic (1)
- No reduction in intensity / time to rest to repay oxygen debt (1)
- Body uses glucose → energy + lactic acid because of the lack of oxygen (1)

Accept any other suitable justification as to why the 400m is an anaerobic event. Answers must include a reasoned justification, linking the demands of the event to how energy is produced.

Maximum 4 marks

14.2 Athletes work at a percentage of maximal heart rate when training.

How is maximal heart rate calculated?

[1 mark]

Marks for this question: AO1 = 1

Award **one** mark for each of the following points up to a maximum of one mark.

- Maximum heart rate (220 bpm) minus age / 220 – age (1)

Maximum 1 mark

15 **Figure 3** shows a person kicking a football.

15.1 Complete **Table 1** to show the joint action occurring at the knee from position **A** to position **B and** the agonist muscle group that causes this action.

[2 marks]

Marks for this question: AO2 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

Joint action	Agonist muscle group
Extension (1)	Quadriceps (1)

Maximum 2 marks

15.2 The vertical jump test measures leg power.

Discuss the suitability of this test for a football player.

[3 marks]

Marks for this question: AO3 = 3

Award **one** mark for each of the following points up to a maximum of three marks.

Agree (sub-max 2 marks)

- Leg power is a component of fitness needed by football players to perform specific skills (1)
- The test measures the ability to jump up so appropriate for jumping to head the ball / a goalkeeper to launch into a save / other equivalent example (1)

Disagree (sub-max 2 marks)

- The test is not sport-specific as would not test power needed to kick a ball / start a sprint towards the ball / other equivalent example (1)
- Does not test many aspects of playing football, eg dribbling / marking / other equivalent example (1)
- Can be argued that other aspects of fitness are more important, eg cardiovascular endurance to last 90 minutes (1)

Accept any other suitable discursive point around the suitability of leg power to football.

Maximum 3 marks

16 Zack is a 16-year-old GCSE PE student. He is just about to play a game of basketball for his school team.

16.1 Zack's respiratory system will experience a number of changes before and during the game of basketball.

Define the terms tidal volume **and** residual volume.

[2 marks]

Marks for this question: AO1 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

- Tidal volume – volume of air inspired or expired / exchanged per breath (1)
- Residual volume – volume of air left in the lungs after maximal expiration (1)

Accept any other suitable definitions of tidal volume and residual volume.

Maximum 2 marks

16.2 Outline what will happen to Zack's tidal volume **and** residual volume once exercise starts.

[2 marks]

Marks for this question: AO2 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

- Tidal volume increases (once exercise starts) (1)
- Residual volume stays the same (once exercise starts) (1)

Maximum 2 marks

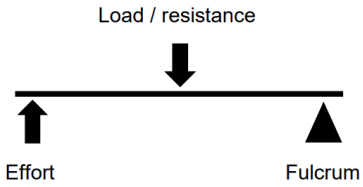
16.3 **Figure 4** shows a basketball player jumping to execute a shot.

Draw the lever system which operates at the ankle joint, labelling the fulcrum, effort and load.

[1 mark]

Marks for this question: AO1 = 1

Award **one** mark for labelling the effort, load / resistance and fulcrum in the correct order.



(1)

Maximum 1 mark

16.4 Discuss the appropriateness of continuous training for a games player like Zack.

[4 marks]

Marks for this question: AO3 = 4

Award **one** mark for each of the following points up to a maximum of four marks.

Agree (sub-max 3 marks)

- Continuous training improves the aerobic system and games need aerobic energy (1)
- Games tend to last a long time, eg 48 minutes in Basketball, and continuous training can mimic the duration (1)
- The main movement can be replicated in continuous training, eg.running action which is generally required in games (1)
- Relatively simple to use in training, eg requires little or no equipment (1)

Disagree (sub-max 3 marks)

- Continuous training is not necessarily sport specific, for example running doesn't always mimic all the skills required (1)
- Games require aerobic and anaerobic energy and continuous training improves the aerobic system (1)
- Games stop and start, and change intensity which is different to continuous training (1)
- Wouldn't apply to all positions in all games, for example a goalkeeper / a wicketkeeper (1)
- Other types of training may be more appropriate and sport specific, for example Fartlek training (1)

Accept any other suitable discursive point around the appropriateness of continuous training for a games player.

Maximum 4 marks

17 Training in sport is often structured into seasons.

Outline **two** reasons why performers take part in pre-season training.

[2 marks]

Marks for this question: AO1 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

- Increase aerobic fitness / general fitness so that they are ready / match fit for the start of the season (1)
- Increase specific fitness, eg weight training for strength (1)
- Develop techniques and skills which are specific to the sport (1)

Accept any other suitable outline of reasons why performers take part in pre-season training. Answers must refer to general / specific fitness or technique and skills. Answers must be outlined rather than simple statements.

Maximum 2 marks

18 Fitness testing is often used as a motivational tool.

18.1 State **two** other reasons why fitness testing is carried out.

[2 marks]

Marks for this question: AO1 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

- To identify strengths and / or weaknesses in a performance (1)
- To evaluate the success of a training programme (1)
- To monitor improvement, eg in strength (1)
- To show a starting level of fitness (1)
- To inform training requirements (1)
- To compare against norms of the group / national averages (1)

Accept any other suitable reason why fitness testing is carried out. Do not credit any response linked to motivation.

Maximum 2 marks

18.2 The Illinois Agility Test is a maximal test that measures agility.

Describe how to carry out this test.

[2 marks]

Marks for this question: AO1 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

AO1

- 10m long x 5m wide / 60m in total (1)
- Subject starts lying down (on their front) (1)
- Subject sprints and weaves around cones (accept diagram) (1)
- Time taken / measured in seconds = agility (1)

Accept any other suitable description of how to carry out the Illinois Agility Test.

Maximum 2 marks

19 Before carrying out a weight training session using heavy weights, Robert carries out an appropriate warm up, including stretching of the major muscles that will be used.

19.1 Explain what other factors Robert should consider to reduce the chance of injury occurring during the session.

[3 marks]

Marks for this question: AO2 = 3

Award **one** mark for each of the following points up to a maximum of three marks.

The answer must include the factor to consider and an explanation that is applied to a weight training session.

- Robert should ensure that he understands the correct lifting technique before starting the session (1)
- Robert should ensure that he has a 'spotter' available for the session (1)
- Robert should plan to avoid over-training by following the correct intensity / use of one rep max test to calculate correct intensity (1)
- Robert should wear appropriate clothing / footwear during the session, eg a clothing that cannot get caught in the weights / footwear to provide support during weight lifting whilst standing (1)
- Robert should use taping / bracing to protect wrists / elbow support when lifting weights (1)

Accept any other suitable explanation of what should be considered at the start of a weight training session to reduce the chance of injury occurring. Explanation must be applied to a weight training session.

Maximum 3 marks

19.2 **Figure 6** shows a performer weight training. This movement is brought about by the muscular and skeletal systems working together.

Explain how the muscles and bones work together to produce the movement from Picture **A** to Picture **B**.

[3 marks]

Marks for this question: AO2 = 3

Award **one** mark for each of the following points up to a maximum of three marks. Answers must refer to the movement from A to B

- Bicep is the agonist / the prime mover which contracts / shortens to cause the movement from A to B (1)
- Biceps are attached to bones in the lower arm via tendons (1)
- Biceps contraction causes a pull on the bones in the lower arm (radius) (1)
- Causing flexion at the elbow (1)
- Tricep is the antagonist which relaxes / lengthens during the movement (1)
- Contraction of the bicep allows movement at the third class lever (1)

Accept any other suitable explanation of how the muscles and bones work together to produce the movement from Position A to Position B.

Maximum 3 marks

19.3 After performing any period of training, a cool down is important.

Identify **two** parts of an effective cool down.

[2 marks]

Marks for this question: AO1 = 2

Award **one** mark for each of the following points up to a maximum of two marks.

- Maintain elevated breathing and heart rate, eg walk, jog to gradually reduce heart rate (1)
- Aim to gradually reduce intensity of exercise / don't just stop (1)
- Stretching of major muscles used in that session (1)

Accept any other suitable identification of part of an effective cool down.

Maximum 2 marks

20 **Table 2** shows the heart rates recorded by a 20-year-old athlete. Heart rates have been recorded every two minutes.

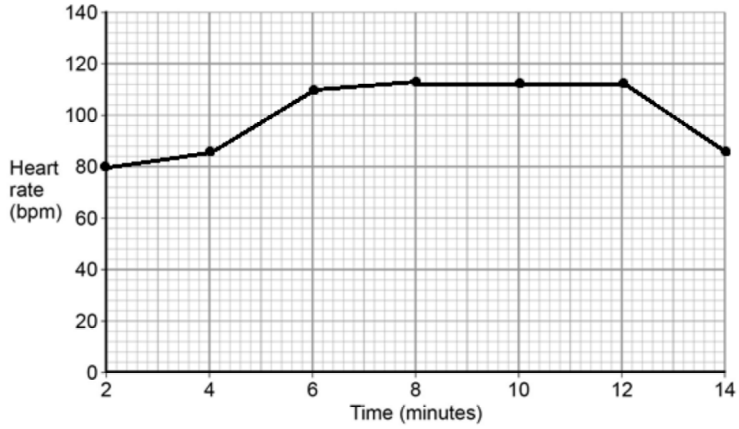
20.1 Plot the information shown in **Table 2** on the graph paper below to show how heart rate has changed over time. Label the axes and join up the points to make a line graph.

[3 marks]

Marks for this question: AO2 = 3

Award **one** mark for each of the following points up to a maximum of four marks.

- Correctly labelled x axis (time minutes) and correctly labelled y axis (heart rate bpm) (1)
- Appropriate numbering on each axis (1)
- Points plotted correctly and joined up (1)



Maximum 3 marks

20.2 Analyse the data shown in **Table 2**. Consider what has happened to the athlete between:

- 4 and 6 minutes and;
- 6 and 12 minutes.

[2 marks]

Marks for this question: AO3 = 2

Award **two** marks for each of the following points up to a maximum of two marks.

- 4 to 6 minutes: Increase in intensity / running speed / possibly started running after warm up (1)
- 4 to 6 minutes: Possibly an anticipatory rise (1)
- 6 to 12 minutes: Intensity has remained the same / running speed has remained constant / steady state running (1)

Accept any other relevant suggestion of what has happened to the athlete between 4 and 6 minutes, and/or 6 and 12 minutes. Answers must be related to an analysis of the data shown in Table 2.

Maximum 2 marks

21	Using your knowledge of agility and reaction time, evaluate the importance of these components of fitness for performers in the 100m sprint. **[6 marks]**

Marks for this question: AO1 = 1, AO2 = 2 and AO3 = 3

Level	Marks	Description
3	5–6	Knowledge of agility and reaction time is accurate and generally well detailed. Application to performers in the 100m sprint is mostly appropriate, clear and effective. Evaluation is thorough, reaching valid and well-reasoned conclusions for both components of fitness. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	3–4	Knowledge of agility and reaction time is evident for both agility and reaction time but is more detailed for one than the other. There is some appropriate and effective application to performers in the 100m sprint, although not always presented with clarity. Any evaluation is clear but reaches valid and well-reasoned conclusions for one component of fitness more than the other. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1–2	Knowledge of agility and reaction time is limited. Application to performers in the 100m sprint is either absent or inappropriate. Evaluation is poorly focused or absent, with few or no reasoned conclusions for either component of fitness. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of agility and reaction time, eg
- Agility – changing direction at speed, whilst maintaining control
- Reaction time – time taken to initiate response to a stimulus

AO2 – Application to the 100m, eg
- 100m sprint does not need agility because it is run in a straight line and therefore changing of direction is not required
- 100m does need reaction time because runners start in a stationary position and have to react to the gun (stimulus) at the start

AO3 – Analysis/evaluation of the importance of agility and reaction time in 100m, eg
- Agility – any changes in direction could result in leaving a lane and being disqualified
- Agility – need to change direction is unlikely. However, athlete may change their positioning within their own lane
- Reaction time – 100m is the shortest outdoor sprint event and therefore reaction time at the start of the event is usually crucial to success
- Reaction time – is a major component impacting on overall time taken to complete the 100m sprint
- Reaction time – it is possible to win a race with a poor reaction time start
- Neither agility nor reaction time is as important as speed

Credit other suitable responses relevant to the question.

22	With reference to a named sporting activity, outline what plyometric and fartlek training are, and justify why they are both relevant to performers in that activity. **[9 marks]**

Marks for this question: AO1 = 2, AO2 = 2, AO3 = 5

Level	Marks	Description
3	7–9	Knowledge of plyometric and fartlek training is accurate and generally well detailed. Application to a named sporting activity is mostly appropriate, clear and effective. Justification is thorough, reaching valid and well-reasoned conclusions for both training types. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	4–6	Knowledge of plyometric and fartlek training is evident but is more detailed for one than the other. There is some appropriate and effective application to a named sporting activity, although not always presented with clarity. Any justification is clear but reaches valid and well-reasoned conclusions for one training type more than the other. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1–3	Knowledge of plyometric and fartlek training is limited. Application to a named sporting activity is either absent or inappropriate. Justification is poorly focused or absent, with few or no reasoned conclusions for either training type. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

Indicative content linked to Netball but can be applied to any named sporting activity.

AO1 – knowledge of plyometric training and fartlek training, eg
- Plyometric training – type of training designed to improve power (Speed x strength) through bounding / hopping / jumping, etc
- Fartlek training – periods of fast work with intermittent periods of slower work, often running, eg sprint, jog, walk, jog, sprint etc

AO2 – application to named sporting activity (must include links to the activities chosen), eg
- (Netball) as a sport requires lower body power to jump/ sprint/ upper body power to throw the ball
- (Netball) as a sport involves running at different speeds, eg sprint, jog, walk, etc

AO3 – Justifications made with specific reasoned conclusions fully linked and appropriate to named sporting activity, eg
- Plyometrics involves jumping which is a vital component of netball to reach for the ball / intercept
- Can mimic many of the other specific movements required in netball (with an example), eg double dodge
- Plyometrics can specifically improves leg power which can be vital to netball, eg to maintain possession following a rebound
- Players can throw from the start of one third to the end of the next (specific rule knowledge) so may need upper body power
- Can easily be included within a netball training session to complement other (named) training types, eg continuous training, agility etc
- Plyometrics requires little or no specific equipment- therefore easily integrated into a netball session

- Can be specifically designed / altered for a netball training session, jumping to reach a ball, sprint dodge, quick catch and forceful release, etc
- Plyometrics can be completed by large groups, eg a netball squad
- Give some credit for a reasoned response that suggests that power is not the most important component in netball and can be limited in training in favour of other training types which are deemed more important, eg agility
- Fartlek training usually involves running and this is a vital component of being able to play netball / accept reverse – very difficult to play whilst still / stationary
- Can mimic many of the specific movements required when playing a match, eg sprinting for space
- Netball requires performers to vary intensity in order to outwit opponents, ie reasoned judgement linking change of intensity to outwitting marker /opponents
- Netball tends to use one to one marking and therefore changing intensity is a vital component in order to mark your opposing player who will also change intensity
- Fartlek can easily be incorporated into a netball training session, eg sprint / dodge / walk, etc
- Fartlek can be completed on a netball court / sports hall as it requires no specific equipment
- Fartlek can be carried out by a large group, eg a netball squad
- Give some credit for a reasoned response that suggests that fartlek training is not the most important training type in netball and can be 'limited / reduced' in training in favour of other training types which are deemed more important, eg agility

Credit other suitable responses relevant to the question.