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# **GCSE MARKING SCHEME**

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**SUMMER 2023**

**PHYSICAL EDUCATION - COMPONENT 1  
SHORT COURSE  
C555U10-1**

## **INTRODUCTION**

This marking scheme was used by WJEC for the 2023 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

**GCSE PHYSICAL EDUCATION**  
**COMPONENT 1 (SHORT COURSE)**  
**SUMMER 2023 MARK SCHEME**

Question	Mark Scheme	AO1	AO2	AO3	Total
1. (a) (i)	<b>Identify the training method shown in Figure 1.</b>  Plyometric training	1			1
(ii)	<b>Justify your reasons for choosing the training method in 1.(a)(i).</b>  Plyometric training involves jumping / bounding actions Plyometric training develops Power. This involves eccentric muscular action followed by a concentric muscular action to create a maximum force. To get the best use of available energy is to perform movements quickly.		2		2
(iii)	<b>Name the component of fitness that could be improved by using the training method shown in Figure 1.</b>  Power	1			1
(iv)	<b>Identify a specific sporting activity in which the component of fitness named in 1.(a)(iii) would be used.</b>  Accept any reasonable response where the activity is specific and related fitness component (power) is obviously used in the activity given. EG Volleyball leap to Spike the ball.	1			1
(b)	<b>Evaluate how a sportsperson could develop the component of fitness identified in 1.(a)(iii) in order to improve performance.</b>  Please refer to banded response sheet before awarding a band then a mark.  <u>INDICATIVE CONTENT</u> The response should directly link the training method to the sporting activity provided. Detail could be provided regarding the type of activities included, the number of repetitions, sets, rest periods and duration along with the intensity of the training session. Mention should be made of the benefits that would occur and how performance would be improved.	2		4	6

<b>Band</b>	<b>AO1 2 marks</b>	<b>AO3 4 marks</b>
<b>3</b>		<p><b>4 marks</b></p> <p>Excellent evaluation links the training method to the component of fitness giving detailed information as to the content of the session.</p> <p>Explicit links are made between the training and improved performance inspecified activity.</p> <p>Excellent use of appropriate grammar, punctuation and spelling.</p>
<b>2</b>	<p><b>2 marks</b></p> <p>Good knowledge of the training method is expressed effectively.</p>	<p><b>2-3 marks</b></p> <p>Good evaluation and links are made between the training method and the component of fitness.</p> <p>Some discussion takes place regarding the possible content of the training session and improved performance.</p> <p>Some good use of appropriate grammar, punctuation and spelling.</p>
<b>1</b>	<p><b>1 mark</b></p> <p>Limited knowledge of the training method is included in the response.</p>	<p><b>1 mark</b></p> <p>Limited evaluation, some links are made between the training method and the component of fitness.</p> <p>Limited discussion takes place about the content of the training session and improved performance.</p> <p>Some errors in grammar, punctuation and spelling.</p>
<b>0</b>	<p><b>0 marks</b></p> <p>Not attempted/no evaluation.</p>	<p><b>0 marks</b></p> <p>Not attempted/no evaluation.</p>

Question	Mark Scheme	AO1	AO2	AO3	Total
(c)	<p><b>Draw a line to match the type of muscle to the correct description.</b></p> <p>Order of answer= C-B-A</p> <p>C= CARDIAC MUSCLE FOUND ONLY IN THE HEART.  B=ALSO KNOWN AS INVOLUNTARY MUSCLE WHICH WORKS AUTOMATICALLY.  A= ALSO KNOWN AS VOLUNTARY MUSCLE WHICH IS UNDER OUR CONTROL.</p>	3			3
(d)	<p><b>Explain the main differences between fast and slow-twitch muscle fibres.</b></p> <p>Fast twitch muscle fibres are used for more explosive, powerful events and activities which need quick reactions.  They contract fast and produce a powerful action.  They work without the use of action and so tire quickly.  Slow twitch muscle fibres are more suited to endurance events.  These fibres contract slowly and with less force than FTMF.  Due to the speed and force of the contractions they can contract many times and stay efficient over long periods.  They have a good oxygen supply providing them with energy.  RED in colour as opposed to FTMF which are WHITE.  FAST twitch fibres good for speed events, throwing and jumping.  SLOW twitch are suited to events that take a long time to complete such as distance running, cycling and swimming.</p> <p><b>2x2 marks for information on both types of muscle fibre.</b></p>		4		4
	<b>TOTAL AOS AND MARKS</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>18</b>

Question	Mark Scheme	AO1	AO2	AO3	Total
2. (a) (i)	<p><b>Using Figure 2, identify the three types of joint.</b></p> <p>SHOULDER = Ball and socket X  NECK = Pivot Y  KNEE = Hinge Z</p> <p>3x1 mark</p>	3			3
(ii)	<p><b>Using Figure 2, identify the type of movement taking place at W, Y and Z.</b></p> <p>W (elbow) Extension  Y (shoulder) Abduction/extension  Z (knee) Flexion</p> <p>3x1 mark</p>	3			3
(b) (i)	<p><b>Define the components of fitness in the table below.</b></p> <p>STRENGTH: the ability to apply force and /or overcome a resistance.</p> <p>FLEXIBILITY: range of limb movement around a joint.</p> <p>MUSCULAR ENDURANCE: the ability of muscles to work for prolonged periods without fatigue.</p> <p>Accept any valid response similar to above.  3x1</p>	3			3
(ii)	<p><b>Describe, using Figure 2, why climbers would need to have high levels of strength, flexibility and muscular endurance.</b></p> <p>Award 3x1 mark</p> <p>for answers describing why the climber would require each of the three components.  The answer must provide a clear example for each component not generic.</p> <p><b>Strength</b> to be able to grip on to rock face and hold position or to move body into next position.</p> <p><b>Flexibility</b> in order to reach, stretch, bend body into difficult positions in order to continue to climb.</p> <p><b>Muscular endurance</b> in order to continue holding positions and/or continue to climb over an extended period of time on the rockface.</p>	3			3

Question	Mark Scheme	AO1	AO2	AO3	Total
(c)	<p><b>Taking part in physical activity can greatly improve the mental well-being of participants. Discuss this statement.</b></p> <p>Please refer to banded response sheet when marking. Read the answer, award a band then award a mark.</p> <p><u>INDICATIVE CONTENT</u> This is a discuss question where candidates are asked to provide specific examples of the possible mental benefits of taking part in activities such as climbing. There may be some generic examples given and candidates may mention physical and social benefits but they must relate these to MENTAL benefits of taking part; EG; climbing in order to relieve stress of everyday living.</p> <p><u>SOME EXAMPLES. AS THERE WILL BE MANY.</u> <u>Accept any reasonable responses which are discussed and linked.</u> SATISFACTION AT OWN PERFORMANCE. PROMOTES FEEL GOOD FACTOR IN INDIVIDUAL. CAN PROVIDE MENTAL STIMULATION. CAN PROVIDE EXCITEMENT. GIVES PLEASURE / ENJOYMENT. STRESS RELIEF. REDUCES TENSION / AGGRESSION. CAN PROVIDE EXHILARATION. DEVELOP SENSE OF INCLUSION IN SOMETHING, FOR EXAMPLE A GROUP. FEELINGS OF SUCCESS / ACHIEVEMENT. DAY TO DAY WORRIES DISAPPEAR WHEN CLIMBING. PROVIDE SENSE OF NEW CHALLENGES.</p>	2		5	7
	<b>TOTAL AOS AND MARKS</b>	<b>14</b>	<b>0</b>	<b>5</b>	<b>19</b>

<b>Band</b>	<b>AO1 2 marks</b>	<b>AO3 5 marks</b>
<b>3</b>		<p><b>5 marks</b></p> <p>Excellent discussion of the possible mental benefits of taking part in activities such as climbing.</p> <p>Specific examples are provided which relate to the activity and benefits of participation.</p> <p>Excellent use of grammar, punctuation and spelling.</p>
<b>2</b>	<p><b>2 marks</b></p> <p>Good knowledge of possible mental benefits of taking part in activities such as climbing is effectively expressed.</p>	<p><b>3-4 marks</b></p> <p>Good discussion of the possible mental benefits of taking part in activities such as climbing.</p> <p>Some examples are provided relating to the activity and possible mental benefits.</p> <p>Punctuation, grammar and spelling are generally good.</p>
<b>1</b>	<p><b>1 mark</b></p> <p>Limited knowledge of the possible mental benefits of taking part in activities such as climbing is included in response.</p>	<p><b>1-2 marks</b></p> <p>Limited discussion of the possible mental benefits of taking part in activities such as climbing.</p> <p>Limited examples are provided to relate the activity to possible mental benefits.</p> <p>The answer is largely descriptive with some errors in punctuation, grammar and spelling.</p>
<b>0</b>	<p><b>0 marks</b></p> <p>Not attempted/no discussion.</p>	<p><b>0 marks</b></p> <p>Not attempted/no discussion.</p>



Question	Mark Scheme	AO1	AO2	AO3	Total
3. (a)	<p><b>Discuss the possible causes of obesity, and suggest solutions to the problem.</b></p> <p>Please refer to banded response sheet.</p> <p>This is a discuss question therefore it is important to fully read responses, allocate a BAND then award MARKS.</p> <p>As well as analysing the data candidates are asked to discuss the possible causes of obesity and make suggestions as to what could be done to ensure that people lead a healthy lifestyle.</p> <p><u>INDICATIVE CONTENT</u></p> <p>There will be many different strategies employed to respond to this question. <b>A maximum of two marks should be awarded for responses in list form.</b> Here little or no analysis or discussion is evident. Some candidates may discuss what is meant by the terms being obese and / or being overweight in their answer.</p> <p><u>FOR EXAMPLE:</u></p> <p>genetic causes for being obese  lack of exercise or lack of intense exercise  lack of role models to guide behaviour  <u>there may be many dietary factors mentioned including:</u>  lack of a balanced diet.  increased consumption of fast foods in modern society.  lack of education / healthy eating / cooking skills.  mention may be made of the energy balance equation in relation to calories consumed and calories burned.  lifestyle of individual including work / life balance, stress etc.  the energy requirements of specific individuals / work etc.  increased westernisation of our diets- link to fast foods.  technology is making our lives easier therefore less work done to burn calories.  In terms of what can be done to ensure that people lead a more healthy lifestyle discussion will / should revolve around many of the factors listed above and others.</p>	2		6	8

Band	AO1 2 marks	AO3 6 marks
3		<p><b>5-6 marks</b></p> <p>Excellent discussion of the causes of obesity and the measures to ensure more people lead a healthy lifestyle.</p> <p>The response is very detailed, clearly expressed and shows accurate use of technical language.</p> <p>Punctuation, grammar and spelling are very good.</p>
2	<p><b>2 marks</b></p> <p>Good knowledge of the possible causes of obesity and potential strategies to reduce obesity is expressed effectively.</p>	<p><b>3-4 marks</b></p> <p>Good discussion of the causes of obesity and the measures to ensure more people lead a healthy lifestyle.</p> <p>The response has some detail, is adequately expressed and shows some use of technical language.</p> <p>Punctuation, grammar and spelling are generally good.</p>
1	<p><b>1 mark</b></p> <p>Limited knowledge of the causes of obesity.</p> <p>Limited knowledge of the strategies to reduce obesity is evident in answer.</p>	<p><b>1-2 marks</b></p> <p>Limited discussion of the causes of obesity and measures to ensure more people lead a healthy lifestyle.</p> <p>The response may be generic with some errors in punctuation, grammar and spelling.</p>
0	<p><b>0 marks</b></p> <p>Not attempted/no knowledge</p>	<p><b>0 marks</b></p> <p>Not attempted/no discussion.</p>

Question	Mark Scheme	AO1	AO2	AO3	Total
(b)	<p><b>Explain the short-term effects of exercise on the body.</b></p> <p>This is an explain question therefore there will be many ways for this question to be answered. If a list is presented there must be some attempt made to amplify content of the list / bullet points in order for marks to be awarded. Four marks are maximum therefore for at least 3 / 4 points fully amplified in order to access full marks.</p> <p><u>INDICATIVE CONTENT</u>  muscles need oxygen to work.  when muscles work harder more oxygen is needed  oxygen combines with haemoglobin to form oxyhaemoglobin.  heart rate increases in order to transfer this oxygenated blood to the working muscles.  working muscles produce heat.  blood vessels at the surface of the skin dilate and heat is released away from the body.  body sweats to remove waste products and cool body.  internal diameter of arteries widen to let more blood through.  minute volume increases.  tidal volume increases.  skin reddens.  cardiac output increases.  gaseous exchange in alveoli becomes more efficient  blood is shunted to working muscles away from other parts of the body where it is not required  stored glycogen is released to allow muscles to work.  adrenaline is released.  breathing rate increases.  breathing becomes deeper.  increased rate of removal of CO<sub>2</sub>.  ACCEPT ANY REASONABLE RESPONSE WHERE EXPLANATION HAS BEEN PROVIDED.</p>		4		4
	<b>TOTAL AOS AND MARKS</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>12</b>

Question	Mark Scheme	AO1	AO2	AO3	Total
4. (a)	<p><b>Using your knowledge of the principles of training, explain how the training session shown in Figure 3 could be changed in order to enhance performance.</b></p> <p>This is an explain question. Candidates are asked to explain the content of the training session and make suggestions how the session could be adapted in the future to ensure performances are improved.</p> <p><u>INDICATIVE CONTENT</u> For full marks to be awarded then there must be a clear explanation of the adaptations to the training programme</p> <p>Session includes warm up and cool down which is important for the athlete. Distance ran increases as session develops. Rest time / recovery time includes walk back to start and recovery time which increases as session develops. Recovery allows quality of work to be maintained.</p> <p>TO DEVELOP SESSIONS YOU COULD; shorten time to run set distances. increase number of reps / sets ran. reduce rest / recovery time. set specific target times / goals for each repetition. add technique drills for the session in order to improve form. record all times of runs as motivational tool. train with other athletes of similar / better ability.</p>		3		3
(b) (i)	<p><b>Identify the method of training described in Figure 3.</b></p> <p>INTERVAL TRAINING</p>	1			1
(ii)	<p><b>Identify the main component of fitness that could be developed in the training session described in Figure 3. Justify your answer.</b></p> <p><u>Speed</u> could be developed. (1)</p> <p><u>JUSTIFY</u> could include: Reference to athletics. Progressive overload used in session. High intensity work is permitted by suitable use of work and rest intervals. High intensity work can assist the improvement of speed. Distance of training intervals are suitable for sprinters to develop speed. Speed= the ability to get from A to B in the fastest possible time. (2x1)</p>	1	2		3

Question	Mark Scheme	AO1	AO2	AO3	Total
(c)	<p><b>Explain how the cardio-respiratory and vascular systems adapt as a result of long-term participation in physical activity.</b></p> <p>This an AO2 question therefore a list does not fully answer the question without amplification. For full marks reference should be made to the heart and circulatory systems adaptations as a result of long term training.</p> <p><u>INDICATIVE CONTENT</u>  heart chambers become larger with thicker / stronger muscular walls.  heart empties chambers more completely.  stroke volume increases.  lower resting heart rate.  heart copes better with harder work due to increased efficiency/ effectiveness/ adaptations.  heart rate returns to resting level faster after exercise.  arteries become larger.  arteries become more elastic.  blood pressure is reduced.  blood volume increases.  capillaries increase in number.  increased number of red blood cells to carry more oxygen to working muscles.  increased haemoglobin levels.  lower levels of fats in the blood.  circulatory system is more efficient at coping with exercise loads.  circulatory system copes better with build up of lactic acid.</p>		4		4
	<b>TOTAL AOS AND MARKS</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>11</b>

<b>QUESTION</b>	<b>AO1</b>	<b>AO2</b>	<b>AO3</b>	<b>TOTAL</b>
1	8	6	4	18
2	14	0	5	19
3	2	4	6	12
4	2	9	0	11
<b>TOTAL</b>	<b>26</b>	<b>19</b>	<b>15</b>	<b>60</b>