



GCSE MARKING SCHEME

SUMMER 2019

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

INTRODUCTION

This marking scheme was used by WJEC for the 2019 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 SHORT CORSE

SUMMER 2019 MARK SCHEME

Question	Mark scheme	AO1	AO2	AO3	Total
1. (a) (i)	<p>Identify the main component of fitness needed by the high Jumper at take off.</p> <p>Award 1 mark for Power</p>	1			1
(ii)	<p>Justify your reasons for choosing the component identified in (a) (i) above.</p> <p>Award marks for Power = Speed x Strength (1) Ability to contract muscles with speed/force in one explosive act (1) The high jumper requires explosive strength at take-off in order to facilitate an effective / efficient take off, flight and bar clearance (1)</p>		2		2
(iii)	<p>Identify a recognised method of training for component of fitness identified in 1 (a) (i). Explain why it could be of benefit to the high jumper shown in the image.</p> <p>Award 1 mark for Identification of suitable training method. Possible answers to include Plyometrics, Weight Training, Circuit Training.</p> <p>Award 3 marks for explanation Answer must Explain the benefits of the training method. A simple answer such as "it would develop power (1 mark). A detailed description of the training method explaining the benefits for the athlete = 2/3 marks. E.G.= Circuit training could explain specificity of the session / circuit to develop power. Weight training example could refer to development of power e.g. 3 sets 10-15 reps at speed using 60-80% of 1 rep max. Plyometric Training= a series of explosive movements designed to improve muscular power. Movements include bounds, hops, jumps, leaps and skips. Muscles can be stretched before they contract. Can be specific to the high jumper.</p>	1	3		4

Question	Mark scheme	AO1	AO2	AO3	Total
(b) (i)	<p>Identify three potential risks to an individual who does not take part in regular physical activity.</p> <p>A wide variety of responses are possible here. They may include physical, mental, social “risks” of not exercising.</p> <p>Award 3 marks for hypertension, diabetes, high blood pressure, heart related problems, poor body image, lack of self-esteem, lack of friends, social exclusion / isolation. Mental stress / inability to relieve stress.</p> <p>Accept any suitable response</p>	3			3
(ii)	<p>Calculate the maximum heart rate (MHR) of a 16 year old individual</p> <p>$220 - \text{age} = 220 - 16 = 204$</p>	1			1
(c)	<p>Complete the table below by matching the training zone or threshold to the letters A, B, C and D.</p> <p>Award 4x1 marks for A= Aerobic Training Zone B= Anaerobic Training Zone C=Anaerobic Threshold D= Aerobic Threshold</p>	4			4
Total Q1		10	5	0	15

Question	Mark scheme	AO1	AO2	AO3	Total
2. (a) (i)	<p>Define the term balance.</p> <p>Award 1 marks for any reasonable definition e.g. balance is the ability to stay upright or stay in control of body movement</p>	1			1
(ii)	<p>Explain why balance is an important component of fitness for a gymnast</p> <p>Award 2 marks for suitable explanation e.g. Balance is required in order for the gymnast to hold the position.</p> <p>Maintaining body position is important for achieving high marks for a gymnast</p>		2		2
(b)	<p>Name two functions of the human skeletal system</p> <p>Award 2 marks for 2 of Support, Protection, Locomotion or Movement and Production of red blood cells</p>	2			2
(c) (i)	<p>Identify two methods of stretching that the gymnast could use during training</p> <p>Award 2x1 marks for Active, Static, Passive and PNF</p>	2			2

Question	Mark scheme	AO1	AO2	AO3	Total										
(ii)	<p>Using specific examples, explain each method of stretching you identified in Q2 (c) (i)</p> <p>Award 1 mark for each expnation Eg <u>Static</u>: we extend our limbs beyond their normal range. Hold the position for at least 10 seconds. Rest and repeat the stretch, Repeat x 5 and gradually increase time held.</p> <p><u>Active</u>: Ensure muscles are warmed up. We extend a movement beyond our normal limit. Repeat rhythmically over a period of 20 seconds. Perform movements slowly at first. Avoid bobbing or bouncing.</p> <p><u>Passive</u>: Flexibility is improved by using a partner to apply external force. He / she moves the limb being exercised to its end position and keeps it there for a few seconds. Repeat exercise ensuring actions are carried out carefully.</p> <p><u>PNF</u>: Uses the fact that muscles are most relaxed immediately after a contraction. Firstly contract muscle as hard as possible. Stretch muscle fully and hold stretch for a few seconds. Relax the muscle briefly before stretching.</p>	2			2										
(iii)	<p>From the table below, Identify one method of training which the gymnast could use in order to improve their performance.</p> <p>Tick(✓) one box only.</p> <table><tr><th>Training method</th><th>Tick (✓) one box only.</th></tr><tr><td>Specificity</td><td></td></tr><tr><td>Faartlek</td><td></td></tr><tr><td>Weight</td><td>(✓)</td></tr><tr><td>S.a.q</td><td></td></tr></table>	Training method	Tick (✓) one box only.	Specificity		Faartlek		Weight	(✓)	S.a.q		1			1
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(iv)	<p>Explain, using appropriate examples, why the gymnast would use the method of training selected in Q2 (c) (iii) above.</p> <p>Award 2 marks for suitable response Explanation may refer to specificity of training linked to specific components of fitness in need of developing by the gymnast.</p> <p>May refer to the ability to overload muscles over a period of time. May refer to ease of use as well as variance in training by using weights. Can target specific muscle groups in need of improvement and design programme accordingly.</p>		2		2								
(d) (i)	<p>Explain the function of each nutrient.</p> <p>Award 1 mark for each nutrient</p> <table><tr><th>Nutrient</th><th>Function</th></tr><tr><td>Carbohydrates</td><td>provide energy to working muscles. Provides energy faster and more efficiently than other energy sources.</td></tr><tr><td>Proteins</td><td>are needed for the repair, growth and efficient working of our tissues. Rarely used as a source of energy.</td></tr><tr><td>Fats</td><td>give us energy although much more slowly than carbohydrates. Fats need oxygen to provide that energy.</td></tr></table>	Nutrient	Function	Carbohydrates	provide energy to working muscles. Provides energy faster and more efficiently than other energy sources.	Proteins	are needed for the repair, growth and efficient working of our tissues. Rarely used as a source of energy.	Fats	give us energy although much more slowly than carbohydrates. Fats need oxygen to provide that energy.		3		3
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(d) (ii)	<p>Assess why it is important for sportspeople to keep hydrated when taking part in sport and physical activity</p> <p>Assessment should draw on some of the following</p> <p>Two thirds of the body is made up of water. We need regular intakes to replenish what has been lost in sweat, urine and condensation. Water allows blood to flow more easily around the body. This is very important when exercising as the body demands more oxygen, nutrients, heat control and waste removal.</p> <p>In endurance events, or when exercising in hot weather, water is lost quickly; this can lead to dehydration / heatstroke if not replenished.</p> <p>Hydration helps with the removal of waste products: helps recovery. Helps regulate body temperatures. Reduce chance of muscle cramps. Can sustain performance for longer.(at a higher level).</p> <p>NB: Some recent research indicates dehydration does not occur unless in very extreme conditions!</p>	1		3	4
Total Q2		9	7	3	19

Question	Mark scheme	AO1	AO2	AO3	Total
3. (a)	<p>Identify the Principle of Training which involves increasing the amount of stress placed upon the body.</p> <p>Award 1 mark for Overload or Progressive Overload</p>	1			1
(b)	<p>Discuss the reasons for an athlete progressively increasing the amount of stress placed upon the body during training.</p> <p>Award 1 mark for identifying the Principle. Award 3x1 marks (AO3) for discussion of how and why to progressively overload.</p> <p>Muscle strength can be improved by making the muscles / body work harder than normal. Putting greater demands / stress on the body when exercising can improve fitness. Exercising at the same degree of difficulty all of the time will only maintain current fitness levels. The body needs to be put under increased stress to continue to improve. After 5-6 weeks there may be a need to change the programme. Need to also overload gradually in order to reduce the potential for injury. This can be done by increasing the frequency, intensity and duration of the activity. Progressively overloading also reduces the potential for reversibility of fitness taking place.</p>	1		3	4
(c)	<p>Explain why it is important for sportspeople to train using correct techniques</p> <p>Answers MAY include:</p> <ul style="list-style-type: none"> • To reduce chances of injury. • Correct techniques used in training will be stored in memory and used in competition / event. • Correct techniques generally produce more effective / efficient performances. • “Practice makes perfect” and removes mental demands when the performer is placed under pressure. <p>Candidates may use sporting examples to support their answers. They may also use relevant theory taken from different parts of the specification</p>		4		4

Question	Mark scheme	AO1	AO2	AO3	Total
(d)	<p>Using sporting examples, discuss why sportspeople need to ensure that they include variance in their training</p> <p>Indicative content</p> <p><u>WHY</u></p> <ul style="list-style-type: none"> • Athlete need to remain motivated otherwise tedium occurs and motivation levels drop. • Variation and addition of different / fun activities can regenerate lost interest. <p><u>HOW</u></p> <ul style="list-style-type: none"> • Changing the training session programme. • Changing the method of training. • Changing the environment in which training occurs. <p>See mark bands below</p>	2		4	6
Total Q3		4	4	7	15

Question	Mark scheme	AO1	AO2	AO3	Total
4. (a)	<p>Using the data shown above, evaluate the benefits of adhering to an active lifestyle.</p> <p>Indicative Content “Health is a state of physical, mental and social/emotional wellbeing”. Physical Benefits (General) Fitness benefits (components), performance benefits e.g. with flexibility, strength, endurance. Body Systems: CV/CR...Musculoskeletal. Joints, blood pressure, BMI, heart related disorders/conditions. Health benefits to: blood pressure, obesity, cholesterol, nutritional issues. Diabetes and stroke avoidance strategies. Improved blood supply to body. Tendons, ligaments and bones become stronger. Improved posture, improved effectiveness / efficiency when performing everyday tasks or physical/sporting activities. Also social and psychological benefits</p> <p>See mark bands below</p>	2		5	7
(b)	<p>Explain anatagonistic muscle action</p> <p>Award 2 marks for Muscles work in pairs (1), as one muscle contracts, the other relaxes (1)</p>		2		2
(c)	<p>Give two reasons why the image shows an example of a third order lever</p> <p>Award 2 marks for During a biceps curl, the fulcrum is the elbow joint (1), the effort comes from the biceps contracting and the resistance is the weight of the forearm and any weight that it may be holding (1).</p>		2		2
Total Q4		2	4	5	11

Assessment grid

	AO1	AO2	AO3	Total
Q1	10	5	0	15
Q2	9	7	3	19
Q3	4	4	7	15
Q4	2	4	5	11
Total	25	20	15	60

Performance bands for 3 (d)

Band	AO1 2 marks	AO3 4 marks
3		<p>4 marks</p> <p>Excellent discussion of why sportspeople need to ensure that they include variance in their training</p> <p>The answer is balanced and detailed, with strong links to improvement in performance</p> <p>Valid conclusions are drawn</p>
2	2 marks for good knowledge of variance	<p>2-3 marks</p> <p>Good discussion of why sportspeople need to ensure that they include variance in their training</p> <p>The answer is balanced, with links to improvement in performance</p> <p>Some valid conclusions are drawn</p>
1	1 mark for limited knowledge of use of variance	<p>1 mark</p> <p>Limited discussion of why sportspeople need to ensure that they include variance in their training</p> <p>The answer is largely descriptive with few links to improvement in performance</p> <p>Few, if any, conclusions drawn.</p>
0	No knowledge of variance is evident	No discussion is evident

Bands for question 4. (a)

Band	AO1 2 mark	AO3 5 marks
3		<p>5 marks</p> <p>Excellent evaluation of benefits of adhering to an active lifestyle</p> <p>Excellent evaluation of all of the graphic and statistical data with valid conclusions drawn about benefits of an active lifestyle</p> <p>At least two aspects of the key content are evaluated in detail.</p> <p>The answer is balanced and measured in response to the question</p>
2	<p>2 marks for good knowledge of benefits of an active lifestyle</p>	<p>3-4 marks</p> <p>Good evaluation of benefits of adhering to an active lifestyle</p> <p>Good evaluation of all of the graphic and statistical data with some valid conclusions drawn about benefits of an active lifestyle</p> <p>At least two aspects of key content are evaluated.</p> <p>Answer is balanced.</p>
1	<p>1 mark for limited knowledge of benefits of an active lifestyle</p>	<p>1-2 mark</p> <p>Limited evaluation of benefits of adhering to an active lifestyle</p> <p>Limited evaluation of the graphic and statistical data</p> <p>Few, if any, conclusions drawn.</p> <p>At least 1 aspect of the key content is superficially evaluated</p>
0	<p>No knowledge of benefits of an active lifestyle is evident</p>	<p>No evaluation of benefits of an active lifestyle is evident</p>