



GCSE MARKING SCHEME

SUMMER 2023

**PHYSICAL EDUCATION - COMPONENT 1
FULL COURSE
C550U10-1**

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 FULL COURSE

SUMMER 2023 MARK SCHEME

Question	Mark scheme	AO1	AO2	AO3	Total
1. (a)	<p>Explain two factors that have affected participation rates of these target groups.</p> <p>Accept suitable responses. 1 mark for factor and 1 mark for the explanation how it helps participation x2</p> <p>2x2 marks Women and disabled Government / NGB focus on improved participation / initiatives E.g. Girls can – improves females' participation etc. Role models (participants and coaching) eg Jill Scott tp be like her Positive school experience / focus on physical literacy eg. enjoyed range of sports taught Funding = more clubs can be offered etc Provision /Equipment/ facilities improvement – disability access</p> <p>Media attention therefore more role models etc Etc All relevant eggs to be accepted, keep positive</p>		4		4
(b)	<p>Identify two long-term health conditions associated with a sedentary lifestyle.</p> <p>2x1 mark</p> <ul style="list-style-type: none"> • stress, • hypertension, • obesity, • arthrosclerosis, • CHD • poor self-esteem, • poor body image • self-confidence • Diabetes (Type 2) 	2			2

Question	Mark scheme	AO1	AO2	AO3	Total
(c)	<p>Explain the relationship between health, fitness and well-being.</p> <p>Candidates can go down the positive or negative route To assess full marks they must explain all 3 aspects</p> <p>1 mark for basic explanation 2 marks for good explanation 3 marks for detailed explanation</p> <p>There are close relationships between health, fitness and exercise (1)</p> <ul style="list-style-type: none"> • Positive relationship – active lifestyle = increased exercise = increased fitness = increased social and mental well-being = BETTER HEALTH! <p>OR</p> <ul style="list-style-type: none"> • Negative relationship – sedentary lifestyle = decreased exercise = decreased fitness = decreased social and mental well-being = POOR HEALTH! <p>Exercise is therefore the key to health and fitness.</p>		3		3
(d)	<p>Evaluate the effect long-term exercise has on the social and mental well-being of an individual.</p> <p>Social – interact with team members, make friends, communication and leadership etc. Mental – sense of belonging, feelings of satisfaction, high self-esteem, stress relief etc.</p>	2		4	6

Band	AO1 2 marks	AO3 4 marks
3	No marks in Band 3 for AO1	<p>4 marks</p> <p>Excellent, well reasoned evaluation of the improvement of the long term health and well-being. Explicit links between the mental and social health and how it aids an individual. The answer is well balanced and an attempt to cover the 2 areas (m,s). The response is clearly expressed and shows an accurate use of terminology. Writing is very well structured using accurate grammar, punctuation and spelling.</p>
2	<p>2 marks</p> <p>Accurate description social and mental wellbeing</p>	<p>2-3 marks</p> <p>Good evaluation of the improvement of the long term health and well-being. Clear links between the mental and social health and how it aids an individual. The answer at the bottom of this band may be one sided. The response is adequately expressed and shows an accurate use of terminology. Writing is generally well structured using accurate grammar, punctuation and spelling.</p>
1	<p>1 mark</p> <p>Accurate description of one of the areas (mental or social)</p>	<p>1 mark</p> <p>Limited evaluation of the improvement of the long term health and well-being. Few links between the mental and social health and how it aids an individual. At least one area analysed. The response shows basic use of terminology. Writing shows evidence of structure but some errors in grammar, punctuation and spelling.</p>
0	No attempt of description	No attempt or incorrect information

Question	Mark scheme	AO1	AO2	AO3	Total															
(e) (i)	<p>Identify the changes in values to the cardio-respiratory and vascular systems from rest to exercise.</p> <table border="1"> <thead> <tr> <th></th> <th>Rest</th> <th>Exercise</th> </tr> </thead> <tbody> <tr> <td>Stroke volume</td> <td>0.7L</td> <td><i>Increases</i></td> </tr> <tr> <td>Blood pressure</td> <td>120 mmHg systolic</td> <td><i>Increases</i></td> </tr> <tr> <td>Breathing frequency</td> <td>12 breaths per min</td> <td><i>Increases</i></td> </tr> <tr> <td>Tidal volume</td> <td>0.5L</td> <td><i>Increases</i></td> </tr> </tbody> </table>		Rest	Exercise	Stroke volume	0.7L	<i>Increases</i>	Blood pressure	120 mmHg systolic	<i>Increases</i>	Breathing frequency	12 breaths per min	<i>Increases</i>	Tidal volume	0.5L	<i>Increases</i>	4			4
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(ii)	<p>Identify the components of the respiratory system.</p> <p>C - Bronchioles A - Diaphragm B - Alveoli</p>	3			3															
(f) (i)	<p>Explain why it is important for a sportsperson to work within the aerobic training zone.</p> <p>1 /2 marks for a basic explanation 3 /4 marks for a detailed explanation.</p> <ul style="list-style-type: none"> to improve aerobic fitness – cardio-vascular endurance Work for longer without producing waste products Waste products cause fatigue therefore can exercise for longer Health benefits for the CR/CV system Burning up fat 		4		4															
(ii)	<p>Explain why continuous training would be used to develop the aerobic energy system.</p> <p>1 mark for knowledge of continuous training, (long period without rest) 1 or 2 marks for explanation of the Training zone and heart rate in relation to the training method</p> <p>Must mention:</p> <ul style="list-style-type: none"> intensity and duration <p>* specificity of training e.g. improving CVE</p>	1	2		3															

Question	Mark scheme	AO1	AO2	AO3	Total				
(g)	<p>Explain the function of carbohydrates and fats during aerobic exercise.</p> <table border="1"> <tr> <td>Carbohydrate</td> <td>Used as quick release main energy source. Higher intensity</td> </tr> <tr> <td>Fats</td> <td>Used as slow energy source Lower intensity</td> </tr> </table>	Carbohydrate	Used as quick release main energy source. Higher intensity	Fats	Used as slow energy source Lower intensity		2		2
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Fats	Used as slow energy source Lower intensity								
		12	15	4	31				

Question	Mark scheme	AO1	AO2	AO3	Total												
2. (a) (i)	<p>Identify the component of fitness each test measures in the table below.</p> <table border="1"> <thead> <tr> <th>Fitness</th> <th>Result</th> <th>Component of fitness</th> </tr> </thead> <tbody> <tr> <td>Vertical Jump test</td> <td>60cm (excellent)</td> <td>Power</td> </tr> <tr> <td>Ruler drop test</td> <td>7.5cm (excellent)</td> <td>RT</td> </tr> <tr> <td>30 m sprint test</td> <td>4.9 sec (average)</td> <td>Speed</td> </tr> </tbody> </table>	Fitness	Result	Component of fitness	Vertical Jump test	60cm (excellent)	Power	Ruler drop test	7.5cm (excellent)	RT	30 m sprint test	4.9 sec (average)	Speed	3			3
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(ii)	<p>From the data in the table above, explain an appropriate SMART target for the 15-year-old sprinter.</p> <p>The target identified should be from speed. The response must relate to speed The target must use the data in the tables to help them set the target</p> <p>Specific – state exactly what will need to be done E.g. I must run 30 m in under 4 seconds at my next attempt. Measurable – Ensure the goal can be measured E.g. 30 m in under 4 secs can be measured. Agreed / achievable – E.g. You and your coach should both agree with the goal / know it is possible Realistic / recorded – E.g. If you set run 30 m in under 1 sec it would be unrealistic /make it practical / write it down Timed – state when it will be achieved</p>	2	4		6												

Band	AO1 2 marks	AO2 4 marks
3		<p>4 marks</p> <p>Identification and excellent explanation of all SMART targets in terms of the most appropriate target which was speed using the data in the table.</p> <p>The response is clearly expressed and shows an accurate use of terminology. Writing is very well structured using accurate grammar, punctuation and spelling.</p>
2	Identification of 3 parts of SMART	<p>2-3 marks</p> <p>Identification and good explanation of most of the SMART targets with the appropriate target and some data used.</p> <p>The response is adequately expressed and shows an accurate use of terminology. Writing is generally well structured using accurate grammar, punctuation and spelling.</p>
1	Identification of 1 or 2 parts of SMART	<p>1 mark</p> <p>1 or 2 SMART targets accurately explained. If a response uses another component of fitness then cannot come out of this band.</p> <p>The response shows basic use of terminology. Writing shows evidence of structure but some errors in grammar, punctuation and spelling.</p>
0	No attempt of description	No attempt or incorrect information

Question	Mark scheme	AO1	AO2	AO3	Total
(iii)	<p>Assess the importance of a fitness test being both reliable and valid.</p> <p>2 x 1 Reliability – so it can be repeated and produce similar results (1) so it can be trusted as being accurate (1) e.g. same person could do the test and no change of result would happen unless there was an increase in fitness levels (1) Validity – did it measure what it was supposed to measure (1) e.g. the vj measures power not flex (1)</p>			2	2
(iv)	<p>Apart from fitness testing, identify two other measurement tools that could be used to assess the physical fitness and health of the sprinter.</p> <p>2 x 1 Blood pressure Heart rate Calorie input and expenditure Questionnaire Screening BMI</p>	2			2
(b)	<p>Explain how a sprinter could apply the principle of overload to their training. 1 for a basic explanation 2 for a more detailed explanation</p> <p>Sprint longer Sprint faster Shorter recoveries</p>		2		2
(c)	<p>Explain how schools may have influenced the participation of the sprinter. 1 for a basic explanation 2 for a more detailed explanation</p> <p>increasing participant and positive experiences opportunities Motivation/self confidence Role models New experiences</p>		2		2

Question	Mark scheme	AO1	AO2	AO3	Total
(d) (i)	<p>Explain the differences between an open and closed skill. Use sporting examples to support your answer.</p> <p><i>Up to 2 marks for explaining what they are</i> <i>Up to 2 marks for explaining differences (e.g.s)</i></p> <p><i>Max marks can only be awarded for the use of sporting examples for open and closed skills</i> Closed skill is predictable/ affected by the environment E.g. Forward roll Open skill is predictable/ not affected by the environment E.g. Passing in football</p>	2	2		4
(ii)	<p>Explain the most appropriate type of practice to develop a closed skill.</p> <p>Fixed (1) Practicing under the same conditions (1)</p>	1	1		2
		10	11	2	23

Question	Mark scheme	AO1	AO2	AO3	Total
3. (a)	<p>Analyse, using Figure 2, the movement taking place at the hips (A) and knee (B) of the gymnast.</p> <p>Type of movement A – Abduction Type of movement B – Extension Plane of movement A – Frontal</p>			3	3
(b) (i)	<p>Define flexibility.</p> <p>Range of movement around a joint (1)</p>	1			1
(ii)	<p>Justify why flexibility is needed by a gymnast.</p> <p>Must include for full marks *increased (1) range of movement to allow...</p> <ul style="list-style-type: none"> • Smoother technique • More complex moves • Stretch the movement more • Avoid injury • Hyperflexion • Aesthetic 		2		2
(iii)	<p>Explain how one method of training could be used to develop flexibility.</p> <p>1 mark for naming training method 2 marks for explanation Active – Extra force to the muscle/ Work initiated by self -slowly and gently Passive – The force is applied by a partner Dynamic – Actively moving the joint by force Proprioceptive Neuromuscular Facilitation (PNF)-max stretch followed by max contraction then max relaxation Plyometrics – high intensity exercises using explosive movements</p>	1	2		3
(iv)	<p>Identify one principle of training from the list below.</p> <p>Specificity</p>	1			1

Question	Mark scheme	AO1	AO2	AO3	Total						
(c) (i)	<p>Describe how each of the following components of fitness are needed by a gymnast.</p> <table border="1"> <thead> <tr> <th>Component</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Balance</td> <td>Stay on the beam Hold balances</td> </tr> <tr> <td>Co-ordination</td> <td>Cartwheeling on the beam Run up and take off on to the vault</td> </tr> </tbody> </table>	Component	Description	Balance	Stay on the beam Hold balances	Co-ordination	Cartwheeling on the beam Run up and take off on to the vault	2			2
Component	Description										
Balance	Stay on the beam Hold balances										
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(ii)	<p>Identify a recognised fitness test for each of the components of fitness below.</p> <p>3x1 mark Balance – stork stand Co-ordination – alternative hand wall throw test Flex – sit and reach</p>	3			3						
(iii)	<p>Identify which term is defined as ‘a muscle that shortens under tension’.</p> <p>Concentric muscle contraction</p>	1			1						
(d)	<p>Analyse the characteristics of a skilled performer.</p> <p>Indicative content required:</p> <p>Efficient Controlled Aesthetically pleasing Accurate Consistent Confidence Flows Reference to the definition a skilled performer (predetermined results/ maximum certainty /minimum time or effort or both Any other reasonable response</p>	2		4	6						
		11	4	7	21						

Band	A01 2 marks	A03 4 marks
3	NO marks in this band	4 marks Characteristics of a skilled performer analysed in detail. Examples of how the characteristics given can influence performance. The response is clearly expressed and shows an accurate use of terminology. Writing is very well structured using accurate grammar, punctuation and spelling.
2	2 marks Identification of 3 characteristics of a skilled performer	2-3 marks Good analysis of characteristics of a skilled performer and how these could influence/ be seen in performance. The response is adequately expressed and shows an accurate use of terminology. Writing is generally well structured using accurate grammar, punctuation and spelling.
1	1 mark Identification of 1 or 2 characteristics of a skilled performer	1 mark Limited analysis. The response shows basic use of terminology. Writing shows evidence of structure but some errors in grammar, punctuation and spelling.
0	0 marks No credit worthy response	0 marks No credit worthy response

Question	Mark scheme	AO1	AO2	AO3	Total									
4. (a) (i)	<p>Analyse the correct movement and agonist muscle at A and B in Figure 3.</p> <table border="1"> <thead> <tr> <th></th> <th>Movement</th> <th>Agonist</th> </tr> </thead> <tbody> <tr> <td>A (shoulder)</td> <td>Circumduction</td> <td>Deltoid</td> </tr> <tr> <td>B (knee)</td> <td>Extension</td> <td>Quadriceps</td> </tr> </tbody> </table>		Movement	Agonist	A (shoulder)	Circumduction	Deltoid	B (knee)	Extension	Quadriceps			4	4
	Movement	Agonist												
A (shoulder)	Circumduction	Deltoid												
B (knee)	Extension	Quadriceps												
(ii)	<p>Explain two movements, other than those stated in 4. (a)(i), that can occur at the shoulder joint.</p> <p>All movements can be used. Accept appropriate examples Look out for repeat of circumduction /extension</p> <p>Up to 2 marks for the identification of the movement Up to 2 marks for the explanation of the movement</p> <p>Rotation- limb moves in a circular movement around a fixed joint towards or away from the midline of the body. E.g. hips when driving a golf shot Adduction- movement towards the midline of the body e.g. legs back after a star jump Abduction – movement away from the midline of the body. E.g. hips and shoulders in a star jump Flexion – bending a joint eg bicep curl</p>	2	2		4									
(iii)	<p>Explain, using sporting examples, the terms ‘prime mover’ and ‘antagonist’.</p> <p>2x2 marks Up to 2 marks for prime mover Up to 2 marks antagonist</p> <p>The muscle that controls the movement is the agonist or prime mover (1) e.g. bicep on the upward phase (1) The muscle that relaxes is the antagonist (1) e.g. triceps on the upward phase (1)</p>		4		4									
(b) (i)	<p>Identify one flat bone that provides protection in a game such as cricket.</p> <p>Scapula Cranium Ribs</p>	1			1									

Question	Mark scheme	AO1	AO2	AO3	Total
(ii)	<p>Describe two ways that a player can assist their recovery after exercise.</p> <p>2x1 mark reducing heart rate gradually, active recovery /cool down Ice baths, Massage Stretching Refuelling/ hydration</p>	2			2
(c)	<p>Assess how intrinsic and extrinsic feedback could influence the performance of a sportsperson such as a cricketer.</p> <p>Intrinsic feedback – how the performance feels (1) so knows what to do or adjust next time (1) Extrinsic feedback which is from the coach, team mates crowd etc. (1) Could influence performance by being immediate to act upon (1)</p> <p><i>May include KOR KOP</i></p>			4	4
(d)	<p>Evaluate how the use of mental preparation could benefit a sportsperson.</p> <p><u>Indicative content – mental prep techniques</u> Imagery (seeing yourself being successful) Visualisation (seeing yourself being successful) Mental rehearsal (rehearsing the skill in your head before)</p> <p>Aids by, Grooving skills Focus on task ahead</p> <p>Reduction of anxiety Link to improvement...images to words Visualise take offs Increases motivation Controls emotions Imagine success Gives confidence Improves concentration Overcomes problems Optimal arousal levels</p>	2		3	5
		7	6	11	24

Band	AO1 2 marks	AO3 3 marks
3	No marks in Band 3 for AO1	3 marks Excellent evaluation of how mental preparation can improve performance. The response uses excellent sporting examples to support their response. The response is clearly expressed and shows an accurate use of terminology. Writing is very well structured using accurate grammar, punctuation and spelling.
2	2 marks Good knowledge of mental preparation techniques	2 marks Good evaluation of how mental preparation can improve performance. Some sporting examples used. At the bottom of this band the examples may be generic. The response is adequately expressed and shows an accurate use of terminology. Writing is generally well structured using accurate grammar, punctuation and spelling.
1	1 mark Limited knowledge of the mental preparation techniques	1 mark Limited evaluation of how mental preparation improves performance. The response shows basic use of terminology. Writing shows evidence of structure but some errors in grammar, punctuation and spelling.
0	0 marks No knowledge of mental preparation techniques	0 marks No knowledge or evaluation

Question	Mark scheme	AO1	AO2	AO3	Total
5. (a) (i)	Using Figure 4, identify the type of synovial joint shown at A. Hinge	1			1
(ii)	Identify the plane of movement taking place at A. Sagittal	1			1
(iii)	Identify the three bones found in the arm. <ul style="list-style-type: none"> • Radius • Ulna • Humerus 	3			3
(iv)	Assess the need for a long-distance runner to have a high proportion of slow-twitch muscle fibres to be successful. 1 mark for a basic assessment 2 marks for a detailed assessment Need a high proportion of these as their movements have slow contractions, low force, fatigues slowly allowing them to last in endurance events			2	2
(b) (i)	Outline three physical short-term effects of aerobic exercise on the body. Increased HR Increased TV Increased temp Increased production of waste products Sweating etc.	3			3
(ii)	Explain the characteristics of anaerobic exercise. 1 mark for a basic explanation 2 marks for a detailed explanation Hr 80%+ MHR/ high intensity / Short period of time / up to 2/3 mins Respiration points respire without o ₂ and produce lactic acid		2		2

Question	Mark scheme	AO1	AO2	AO3	Total
(c)	<p>Sponsorship and the media play a major part in financing sport. Discuss this relationship.</p> <p>Candidates should engage in the golden triangle in relation to the question asked</p> <p>Sponsorship negs Financial uncertainty Withdrawal of sponsorship Economic impact Can give performer negative image Only for minority</p> <p>Sponsorship pos Teams/ind can buy kit/equipment/coaches Pay entry to comps Training camps funded Improved facilities for players /spectators Allows more professional approach etc</p> <p>Media positive Attract sponsors which brings money to sport Selling of TV rights which help fund sport Increased media attention = increased finance Aided globalisation</p> <p>Media negatives Only the top clubs/performers get media attention Minorities ignores so not as much funding Funding of technology only for some</p>	2		4	6

Band	AO1 2 marks	AO3 4 marks
3	No marks in Band 3 for AO1	<p>4 marks</p> <p>An excellent discussion of the relationship between sponsorship <u>and</u> the media affect finances of sport. Must relate to financial issues not generic issues. Positives and negatives addressed. The response is clearly expressed and shows an accurate use of terminology. Writing is very well structured using accurate grammar, punctuation and spelling.</p>
2	<p>2 marks</p> <p>Identification of 2 key points</p>	<p>2-3 marks</p> <p>Good discussion of how sponsorship and/or media affect finances of sport. The response is adequately expressed and shows an accurate use of terminology. Writing is generally well structured using accurate grammar, punctuation and spelling.</p>
1	<p>1 mark</p> <p>Identification of 1 key point</p>	<p>1 mark</p> <p>Limited discussion about sponsorship and /or media. May be generic in this band rather than addressing financial issues. The response shows basic use of terminology. Writing shows evidence of structure but some errors in grammar, punctuation and spelling</p>
0	<p>0 marks</p> <p>No knowledge of media and sponsorship</p>	<p>0 marks</p> <p>No knowledge or discussion</p>

Question	Mark scheme	AO1	AO2	AO3	Total
(d)	<p>Explain <u>two possible</u> negative consequences of the use of technology to analyse sporting performance.</p> <p>Must have point and explanation for EACH mark</p> <p>*Only available to certain sports or performers / expense eg. Premier league have VAR where lower leagues do not</p> <p>*Undermines officials when for e.g. VAR overrule a decision</p> <p>*Stops the flow of the game e.g. time taken in a game waiting for the TMO to make a decision</p> <p>*Traditions erased e.g the referee role has been diminished</p> <p>*Coaches become reliant on technology and forget about human judgement/ opinion e.g. look at distance covered rather than what the performance was like on the pitch</p>		2		2
		10	4	6	24

	Q1	Q2	Q3	Q4	Q5	TOTAL	OVERALL WEIGHTING
AO1	12	10	11	7	10	50	25%
AO2	15	11	4	6	4	40	20%
AO3	4	2	7	11	6	30	15%
TOTAL	31	23	22	24	20	120	