



GCSE MARKING SCHEME

SUMMER 2022

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

INTRODUCTION

This marking scheme was used by WJEC for the 2022 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 2022 MARK SCHEME

Question	Mark scheme	AO1	AO2	AO3	Total
1. (a) (i)	<p>Analyse the data in Figure 1 to identify two differences in the heart rate response to exercise between trained and untrained 16-year-olds</p> <p>Award 1 mark for 1 difference Award 2 marks for 2 differences One difference Untrained has a higher working/ exercising heart rate Trained would have a lower working/exercising heart rate One difference Recovers quicker Recovers slower</p>			2	2
(ii)	<p>Explain one reason why there is a difference in heart rate between the two 16-year-olds in Figure 1.</p> <p>Award 1 mark for a basic explanation Award 2 marks for a developed explanation– the reason given</p> <p>Fitness levels can be accepted hypertrophy, improved energy systems, increased stroke volume increased cardiac output lower rhr (had this in the 1st part but is not the response)</p>		2		2
(b)	<p>Name the 2 types of circulatory systems found in the body</p> <p>1 mark for each</p> <p>Pulmonary Systemic</p>	2			2
(c)	<p>Explain how the body regulates temperature during exercise.</p> <p>Award 1-2 marks for basic explanation for sweating and evaporation, heat loss Award 3-4 marks more developed explanation detail of vasodilation and vasoconstriction</p> <p>Vasodilation of blood vessels = heat loss/cooling Vasoconstriction radiation (don't have to use those terms) Sweating = evaporation to cool them body down Accept blood vessels widening/narrowing</p>		4		4

Question	Mark scheme	AO1	AO2	AO3	Total
(d)	<p>Explain how continuous training could be used to improve cardiovascular endurance</p> <p>Award 1 mark for basic explanation intensity and duration Award 2 marks for a good explanation of intensity and duration Award up to 3 marks for developed explanation for example</p> <p>Specific percentages</p> <p>Specific time Energy system aerobic Explanation needs to include intensity (Low/medium)(1) and duration (long) (1)</p>		3		3
(e) (i)	<p>Explain the importance of intrinsic and extrinsic motivation to aid adherence to physical activity.</p> <p>Award 1-2 marks for knowledge of intrinsic and/or extrinsic motivation Award 3-4 marks for a developed explanation in relation to the importance of motivation to adherence</p> <p>Intrinsic –taking part for the love/ satisfaction/ health reasons Extrinsic – taking part for rewards / praise etc SMax The need for intrinsic is most important to adhere to activity. Extrinsic can provide motivation to train harder</p>	2	2		4
(ii)	<p>Identify one method that can used to aid mental preparation.</p> <p>Imagery/visualisation / mental rehearsal</p>	1			1
(f) (i)	<p>State two long-term consequences of an inactive lifestyle</p> <p>Award 1 mark for each consequence</p> <p>Obesity Athrosclerosis Hypertension Poor self esteem Poor body image or confidence Stress</p>	2			2
(ii)	<p>Justify how physical education aids a child’s overall wellbeing?</p> <p>Award 1-2 marks for a basic justification of how PE aids wellbeing Award 3-4 marks for a developed justification of how PE aids wellbeing</p> <p>Helps children develop confidence, motivation, self esteem Physical Literacy Physically Mentally Socially Helps develop habits of a healthy lifestyle</p>		4		4
		7	15	2	24

Question	Mark scheme	AO1	AO2	AO3	Total																
2. (a)	<p>Identify the axis AND plane of movement that the gymnast is working in (AO1, 2)</p> <table border="1"> <thead> <tr> <th>Axes of movement</th> <th>Tick one box only</th> <th>Planes of movement</th> <th>Tick one box only</th> </tr> </thead> <tbody> <tr> <td>Sagittal</td> <td></td> <td>Sagittal</td> <td>x</td> </tr> <tr> <td>Vertical</td> <td></td> <td>Frontal</td> <td></td> </tr> <tr> <td>Frontal</td> <td>x</td> <td>Transverse</td> <td></td> </tr> </tbody> </table>	Axes of movement	Tick one box only	Planes of movement	Tick one box only	Sagittal		Sagittal	x	Vertical		Frontal		Frontal	x	Transverse		2			2
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(b)	<p>Identify the correct bones and muscles</p> <p>A. Femur B. Gluteal C. Gastronemius – don't accept calf</p>	3			3																
(c)	<p>Explain why the gymnast in Figure 2 is working in the anaerobic training zone</p> <p>Award 1 mark for basic explanation for high intensity Award 2 marks for developed explanation with clear percentage</p> <p>High intensity / 80%+ MHR/ Do not accept e.g. for a mark as been given</p>		2		2																
(d)	<p>Identify which classification lever is the most efficient when moving a load.</p> <p>First class lever Accept second class lever</p>	1			1																
(e) (i)	<p>Define the power</p> <p>Power -The ability to perform strength movements quickly/ speed x strength</p>	1			1																
(ii)	<p>Explain how plyometric training could be used to develop power</p> <p>Award 1 mark for a basic explanation of plyometric training intensity and duration Award 2-3 marks for development of the explanation</p> <p>Percentages Duration / intensity Eccentric Specific time and distance</p>		3		3																

Question	Mark scheme	AO1	AO2	AO3	Total												
(iii)	<p>Identify the relevant fitness component and test for each definition</p> <table border="1"> <thead> <tr> <th>Definition</th> <th>Fitness component</th> <th>Name of fitness test</th> </tr> </thead> <tbody> <tr> <td>Moving the body as quickly as possible from A to B</td> <td>Speed</td> <td>20-30m sprint</td> </tr> <tr> <td>The ability to move two or more body parts at the same time</td> <td>Co-ordination</td> <td>Alternate hand throw</td> </tr> <tr> <td>The percentage of body weight that is fat, muscle and bone</td> <td>Body Composition</td> <td>Skin fold callipers/ body fat</td> </tr> </tbody> </table>	Definition	Fitness component	Name of fitness test	Moving the body as quickly as possible from A to B	Speed	20-30m sprint	The ability to move two or more body parts at the same time	Co-ordination	Alternate hand throw	The percentage of body weight that is fat, muscle and bone	Body Composition	Skin fold callipers/ body fat	6			6
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(iv)	<p>Justify the importance of monitoring fitness levels for an elite sports person</p> <p>Award 1 mark for basic explanation Award 2 marks for developed explanation</p> <p>strengths and weaknesses Baseline Current level of fitness Improvement Comparison Motivations Monitor progress</p>		2		2												
(v)	<p>Identify how the maximum heart rate of an individual is calculated</p> <p>220 – age</p>	1			1												

Question	Mark scheme	AO1	AO2	AO3	Total
(f)	<p>Explain two reasons why a warm-up would benefit a sports performer</p> <p>Award 1-2 marks for a basic explanation looking just at the reason Award 3-4 marks for a developed explanation including the impact of the reason</p> <p>Raising the body temp to aid muscles contraction Increasing elasticity of muscles to reduce the chances of injury Increase ROM to improve their performance in..... Get mentally prepared to increase their race awareness / get in the zone. Focus to increase their tactics etc Motivation to be ready for their race/match. Accept any relevant response, they must have the to for the mark</p>		4		4
(g)	<p>Gamesmanship is a more common behaviour than sportsmanship in modern day sport Discuss.</p> <p>Definitions Sportsmanship – performing to the laws, conventions and expectations of the activity Keeping to the written and unwritten rules of the sport e.g. shaking hands, kicking the ball into touch Gamesmanship – bending or stretching the rules to gain an advantage. E.g., Time wasting etc. Don't accept cheating/ breaking rules</p> <p>Discussion could include +tive Gamesmanship part of game due to financial rewards / more exciting / -tive – unfair / more prevalent in contact sports / too much pressure / Americanisation of sport / media pressure +tive sportsmanship, upholds traditions of sport / keeps sport calm and crowd / promotes values / positive role models -tive, may be left behind if too strict in upholding values</p> <p>(may find few –tives of sportsmanship, do not disadvantage)</p>	2		4	6
		16	11	4	31

Band	A01 2 marks	AO3 4 marks
3	No marks awarded	<p>4 marks</p> <p>Excellent, detailed discussion of how and why sportsmanship and gamesmanship are witnessed in sporting competitions The response is detailed The response is clear and shows accurate use of technical terminology. The response is well structured using accurate grammar, punctuation and spelling The response is balanced (pos /neg) related to sporting competitions</p>
2	<p>2 marks</p> <p>Gamesmanship and sportmanship identified</p>	<p>2-3 marks</p> <p>Good discussion of of how sportsmanship and gamesmanship are witnessed in sporting competitions At the bottom end of this band the response may only focus on the positive or neagive aspects The response is adequtely expressed and shows use of appropriate technical terminology. The response is generally well structured using reasonably accurate grammar, punctuation and spelling</p>
1	<p>1 mark</p> <p>Identification of either gamesmanship or sportsmanship</p>	<p>1 mark</p> <p>Limited discusssion of one behaviour. Some strcture but with errors in grammar, punctuation and spelling. Basic use of technical terminology.</p>
0	<p>0 marks</p> <p>No identification of either gamesmanship or sportsmanship</p>	<p>0 marks</p> <p>No attempt</p>

Question	Mark scheme	AO1	AO2	AO3	Total
3. (a) (i)	<p>Identify the type of guidance shown in fig 3</p> <p>Mechanical (1)</p>	1			1
(ii)	<p>Analyse types of guidance that could be used to aid learners through the cognitive stage of learning.</p> <p>Question to focus on the cognitive stage</p> <p>Visual- <i>use of demonstration /pictures /charts /video/ pitch markings etc. e.g. teacher demonstrates a tennis serve. Essential for a beginner. Builds a mental picture Increases understanding</i></p> <p>Verbal – <i>instructions / telling etc. e.g. coach tells performer where to place hands on ball in a lay up. Beginners need this to be simple and concise also repeated Helps understanding of the new skill</i></p> <p><i>Verbal and visual work best together.</i></p> <p>Manual – <i>physical support / moving joints through the movement e.g. coach takes the performer through the movement e.g. holding the swimmer in position/ holds them in a handstand. Allows the beginner to feel the correct movement (kinesthesis) Reduces fear and gives confidence</i></p> <p>Mechanical – <i>use of a device /support / equipment/ aids E.g. Tackle pads/ harness in tramp Used for safety reasons to give confidence Correct movement (kinesthesis) Reduces fear Learns correct technique</i></p>	2		4	6

Band	AO1 2 marks	AO3 4 marks
3	No marks awarded	<p>4 marks</p> <p>Excellent, detailed analysis of different types of guidance to aid a beginner. The response is detailed The response is clear and shows accurate use of technical terminology. The response is well structured using accurate grammar, punctuation and spelling The response is balanced for two types of guidance</p>
2	<p>2 marks</p> <p>Different types of guidance identified</p>	<p>2-3 marks</p> <p>Good analysis of different types of guidance to aid a beginner At the bottom end of this band the response may be unbalanced and generic to all learners The response is adequately expressed and shows use of appropriate technical terminology. The response is generally well structured using reasonably accurate grammar, punctuation and spelling</p>
1	<p>1 mark</p> <p>Identification of one type of guidance</p>	<p>1 mark</p> <p>Analysis of one type of guidance. Some structure but with errors in grammar, punctuation and spelling. Basic use of technical terminology.</p>
0	<p>0 marks</p> <p>No identification of guidance methods</p>	<p>0 marks</p> <p>No attempt</p>

Question	Mark scheme	AO1	AO2	AO3	Total						
(b)	<p>Justify one reason for performing a cool-down</p> <p>Award up 1 mark for a basic explanation looking just at the reason Award to 2 marks for a developed explanation including the impact of the reason</p> <p>E.g. Removal of waste products to speed up recovery Countering dehydration and loss of salts to reduce chances of injury Maintain /Gradually reduce HR to eliminate blood pooling</p>		2		2						
(c)(i)	<p>Explain, using sporting examples, self-paced and externally paced skills.</p> <p>2x2 marks</p> <table border="1"> <thead> <tr> <th>Type of skill</th> <th>Explanation using sporting example</th> </tr> </thead> <tbody> <tr> <td>Self-paced</td> <td>Rate/speed/start is dictated by the performer Diver (accept relevant e.g.)</td> </tr> <tr> <td>Externally paced</td> <td>Rate/speed/start is dictated by the environment or others Goalkeeper</td> </tr> </tbody> </table>	Type of skill	Explanation using sporting example	Self-paced	Rate/speed/start is dictated by the performer Diver (accept relevant e.g.)	Externally paced	Rate/speed/start is dictated by the environment or others Goalkeeper		4		4
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(ii)	<p>Identify two characteristics of a skilled performer. 2 x 1 mark</p> <p>Technique Consistency Accuracy Efficiency Effectiveness Confidence Control Aesthetic</p>	2			2						
(d)	<p>Identify three factors that could impact on participation in sport</p> <p>3x1 mark</p> <p>Age /disability / gender / society / ethnicity / cost / access / role models / schools/ family</p> <p>Accept any other correct responses</p>	3			3						
(e) (i)	<p>Identify a normal resting minute ventilation (l/min) value for a healthy individual</p> <p>6l/min (1)</p>	1			1						

Question	Mark scheme	AO1	AO2	AO3	Total
(ii)	<p>State one function of the respiratory system</p> <p>Gaseous exchange Oxygenation of blood Removal of waste products</p>	1			1
(f)	<p>Analyse the different types of muscle fibres used in team games.</p> <p>DO NOT have to use rugby but a team game</p> <p>Slow /type 1 – low intensity contractions Aerobic Low speed of contraction High resistance to fatigue Low force of contraction – needed for jogging back to position in a game, able to jog back to position for the duration of the game</p> <p>Fast /type 11 Anaerobic Low resistance to fatigue Fast speed of contraction High force of contraction</p> <p>- Needed for tackling efficiently in tackles, sprinting up the line etc. A mixture in team games is beneficial</p>	2		4	6
		12	6	8	26

Band	AO1 2 marks	AO3 4 marks
3	No marks awarded	<p>4 marks</p> <p>Excellent, detailed analysis of the different types of muscles fibres in team games. The response is detailed The response is clear and shows accurate use of technical terminology. The response is well structured using accurate grammar, punctuation and spelling The response is balanced for both fibre types and will state how team games need both fibre types</p>
2	<p>2 marks</p> <p>Identification of fast and slow twitch fibres</p>	<p>2-3 marks</p> <p>Good analysis of the different types of muscles fibres. May only analyse the fibre types separately The response is adequately expressed and shows use of appropriate technical terminology. The response is generally well structured using reasonably accurate grammar, punctuation and spelling</p>
1	<p>1 mark</p> <p>Identification of one type of muscle fibre</p>	<p>1 mark</p> <p>Analysis of one muscle type. May be a list of characteristics Some structure but with errors in grammar, punctuation and spelling. Basic use of technical terminology.</p>
0	<p>0 marks</p> <p>No identification of any muscle fibres</p>	<p>0 marks</p> <p>No attempt</p>

Question	Mark scheme	AO1	AO2	AO3	Total
4. (a) (i)	<p>Identify the type of muscular contraction shown at A in the downward movement at the elbow in Figure 4.</p> <p>Eccentric</p>	1			1
(ii)	<p>Analyse the movement taking place during both phases of the pull up) in Figure 4.</p> <p>A – Extension (1) and Biceps (1) B – Flexion (1) and Biceps (1)</p>			4	4
(iii)	<p>Identify the type of synovial joint found at the neck (C)</p> <p>Pivot</p>	1			1
(b)	<p>Complete the boxes using the following lever terms</p> <p>L - A E - B F - C</p>	3			3
(c) (i)	<p>Assess the importance of applying progression and overload to a training programme.</p> <p>Award 1-2 marks assessing what they do</p> <p>Progression – increase exercise gradually e.g..... Start at a level suitable for the fitness level e.g.....</p> <p>Overload Intensity – increase the intensity e.g..... Frequency - increase the amount of times exercise is undertaken per week e.g..... Duration – increase the length of time e.g.....</p> <p>Award 3-4 marks for assessing why they are used</p> <p>If this is not completed gradually then injury can occur Overtraining can cause performance to drop Body must be pushed to beyond normal range to improve Muscle adaptations will then occur (size/strength/endurance) Enabling body to cope with a higher performance level</p>			4	4
(ii)	<p>Define the principle of training, variance</p> <p>Training must be varied to avoid boredom (1)</p>	1			1

Question	Mark scheme	AO1	AO2	AO3	Total																		
(d)	<p>Discuss the advantages and disadvantages of the media's influence on sport.</p> <p>Advantages and disadvantages must be discussed for full marks. Linked to influence on sport</p> <table border="1"> <thead> <tr> <th>Ad</th> <th>Disad</th> </tr> </thead> <tbody> <tr> <td>Improves perf level</td> <td>Increases pressure on performers</td> </tr> <tr> <td>Generates wealth in sport</td> <td>More deviance</td> </tr> <tr> <td>Improves standard of coaching</td> <td>Elitism</td> </tr> <tr> <td>Sponsorship</td> <td>Too expensive to take part or watch</td> </tr> <tr> <td>Positive role models</td> <td>Neg role models</td> </tr> <tr> <td>Raises profile</td> <td>Minority sports overlooked</td> </tr> <tr> <td>Access to sports stars</td> <td>Sensationalises sports</td> </tr> <tr> <td>Sport more interactive</td> <td>Armchair spectators</td> </tr> </tbody> </table>	Ad	Disad	Improves perf level	Increases pressure on performers	Generates wealth in sport	More deviance	Improves standard of coaching	Elitism	Sponsorship	Too expensive to take part or watch	Positive role models	Neg role models	Raises profile	Minority sports overlooked	Access to sports stars	Sensationalises sports	Sport more interactive	Armchair spectators			4	
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(e)	<p>Draw a line to match the terms to the correct statements</p> <table border="0"> <tr> <td>Ligament</td> <td></td> <td>Attaches muscle to bone</td> </tr> <tr> <td>Tendon</td> <td></td> <td>Relaxes while the agonist contracts</td> </tr> <tr> <td>Antagonist</td> <td></td> <td>Attaches bone to bone</td> </tr> </table>	Ligament		Attaches muscle to bone	Tendon		Relaxes while the agonist contracts	Antagonist		Attaches bone to bone	3			3									
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		9	0	12	21																		

Question	Mark scheme	AO1	AO2	AO3	Total
5. (a)	<p>Analyse the importance of different the types of practice, when developing movement skills</p> <p>Indicative content</p> <p>Fixed Description – practice remains the same / the same or constant situation / same movement practised repeatedly in same environment e.g. a cricket bowler practising in indoor nets or gymnast practicing a forward roll Good for cognitive learners develop motor programmes / for over learning / to perfect skill Good for closed skills Good for self-paced skills</p> <p>Varied Practice changes regularly / different situations or environment / different activities performed in different ways e.g. Passing in different situation (isolation, passive defence, active defence, small sides games) or other suitable e.g. Good for open skills</p> <p>Whole Involves repeating the whole of the action at once, when you cannot break the skill down. E.g. sprinting, dribbling This will allow the performer to get a ‘feel’ of the skill. Learning can be quicker You would repeat the move over and over Also simple skills which are easy to learn would be taught ‘whole’. Autonomous performers may use this practice method also. BUT can be de-motivating if you cannot do it.</p> <p>Part Best suited to skills of a more complex nature (ones with many parts) Work on the isolated sub-routine, perfect it, then put it back together</p> <p>Whole -part-whole -Helps to practice the whole skill first then break down into sub routines (small chunks/parts). (swimming /triple jump)</p> <p>It is manageable/achievable. Can be safer learning a dangerous skill Good for cognitive stage BUT can take a long time to learn</p>	2		4	6

Band	AO1 2 marks	AO3 4 marks
3	No marks awarded	<p>4 marks</p> <p>Excellent, detailed analysis of different types of practice methods in developing movement skills. The response is detailed The response is clear and shows accurate use of technical terminology. The response is well structured using accurate grammar, punctuation and spelling The response is balanced for 2 types of practice Use of examples</p>
2	<p>2 marks</p> <p>Give a brief description of two types of practice methods</p>	<p>2-3 marks</p> <p>Good analysis of different types of practice methods in developing movement skills. At the bottom end of this band the response may be unbalanced and not give examples The response is adequately expressed and shows use of appropriate technical terminology. The response is generally well structured using reasonably accurate grammar, punctuation and spelling</p>
1	<p>1 mark</p> <p>Give a brief description of one or more type of practice methods</p>	<p>1 mark</p> <p>Analysis of one type of practice methods in developing movement skills. Some structure but with errors in grammar, punctuation and spelling. Basic use of technical terminology.</p>
0	<p>0 marks</p> <p>No identification of practice methods</p>	<p>0 marks</p> <p>No attempt</p>

Question	Mark scheme	AO1	AO2	AO3	Total
(b)	<p>Identify two reasons for the use of goal setting in a training programme</p> <p>Focus Develop strategies Motivation Gauge progress</p>	2			2
(c)	<p>Explain one possible advantage of using technology to improve sporting performance.</p> <p>Award 1 mark for the technology Award 2 marks for links to sporting performance</p> <p>Positives of technology To make judgements more objective, using data to inform team selection To identify strengths and areas for improvements. Develop training programmes Analysis of tactics and strategies Match preparation Analysis of techniques Prevent injury through development of correct techniques.</p>		2		
(d)	<p>Identify two nutrients that are essential for bone health and growth</p> <p>2x1 mark</p> <p>Accept only Vitamins Minerals Do not accept names of vitamins or minerals</p>	2			2
(e)	<p>Explain, using sporting examples, the energy balance equation</p> <p>Up to 2 marks basic explanation Up to 4 marks for a developed explanation Up to 6 marks for a detailed explanation using examples</p> <p>Maintaining a healthy weight requires a balance between energy in and energy out. (2) Too much energy in or too little energy out leads to excess energy being stored as fat. (2) Too little energy in or too much energy out leads to weight loss. (2) Accept diagrams</p> <p>Maintain energy levels Lose /gain weight to hit a weigh in Carry too much weight become slower and ineffective</p>		6		6
		6	8	4	18

	Q1	Q2	Q3	Q4	Q5	TOTAL	OVERALL WEIGHTING
AO1	7	16	12	9	6	50	
AO2	15	11	6	0	8	40	
AO3	2	4	8	12	4	30	
TOTAL	24	31	26	21	18	120	