	Topic	Subject Content	Red	Amber	Green															
		Paper 1: Physiological Factors Affecting Performance (H555/01)				Everlearner Extra Reading / Documentaries / Podcasts														
		1.1 Skeletal and Muscular Systems																		
	Joints, movements and	- flexion, extension, abduction, adduction, horizontal flexion/ extension, medial and lateral rotation,				Checkpoint 1														
	Functional roles of muscles	- agonist				Checkpoint 2														
_	Analysis of movement Skeletal muscle contraction	- joint type				Checkpoint 2 Checkpoint 2														
eve.	Muscle contraction during	- slow oxidative				Checkpoint 2														
ASL	Lardiovascular system at	1.2 Cardiovascular and Respiratory Systems																		
	cardiovascula? System during	- heart rate				Checkpoint 3 Checkpoint 3 Science to Sport - Heart Rate and ExerciseScience of Sport - The Sport	ting Heart													
	Respiratory system at rest	- breathing frequency				Checkpoint 4														
	respiratory system during	- breathing frequency				Checkpoint 4														
	Adenosine impriospriate	1.3 Energy for exercise				Checkpoint 5														
	Energy systems and ATP	- ATP-PC (Phosphocreatine) system				Checkpoint 5 Checkpoint 5 Science of Sport - Watt th FTP														
evel	ATP resynthesis during					Checkpoint 5 Science of Sport - The Science of EnduranceScience of Sport - The Sci	ience of Endura	nce: Fuel and	HydrationScience of Sport - The	Science of Fat	igueScience of	Sport - Fatigue	e and how to imp	prove it						
AL	*The recovery process	A A Faultaneoustal affasta en hade sectores				Checkpoint 5														
	*Exercise at altitude	- reduced arterial PO2 (partial pressure of overan) leading to impaired muscle O2 delivery			1	Checkpoint 6														
	*Exercise in the heat	temperature regulation				Checkpoint 6 Science of Sport - The effects of heat on exercise\ Science of Sport -	How Cold Affe	cts Exercise												
		1.2.a Diet and nutrition and their effect of physical activity and performance			1															
		- carbohydrates																		
		- proteins																		
		- minerals																		
	Diet and nutrition	- vitamins - fibre				Checkpoint 7 Science of Sport - The Science of Nutrition														
		- water						1				1	1	1	1					
		Energy intake and expenditure and energy balance in physical						1				1	1							
		activity and performance.					I	1			I	1	1							
		оос от отдодотно акоа, росстват встение ако пака.											1							
		- pharmacological aids: - anabolic steroids											1	1	1					
		- erythropoletin (EPO)																		
		- numan growth normone (HGH) - physiological aids:																		
		- blood doping,																		
	Exercise 1 de	- cooling aids				Checkpoint 7 Science of Sport Doping and the ouring appa of Shelby HaulihanScien	Sport The D	una la Caart a	oloodo											
	Ergogenic aids	- nutritional aids:				Checkpoint 7 Science of Sport - Doping and the curlos case of Shelby Houlinanscien	ce of Sport - T	te truth about e	exercise and hydrationScience of	Sport - The Di	ugs in Sport ej	DISOGE								
		- composition of meals																		
		- timing of meals																		
		- glycogen/carbohydrate loading																		
		- creatine - caffeine																		
		- bicarbonate																		
	1.2	b Preparation and training methods in relation to improving and maintaining physical activity a	and performat	ice							1									
		Aerobic capacity and maximal oxygen uptake (VO2max)																		
		How VO2max is affected by:																		
		- individual physiological make-up - training																		
		- age																		
		- gerneu																		
		Methods of evaluating aerobic capacity: - laboratory test of VO2max using direct gas analysis																		
		- NCF multi-stage fitness test																		
		- Queen's College step test - Cooper 12 minute run																		
	Aerobic training	tetere la conditional de la facilita constituir des sins de la constituir des sites de la constituir				Checkpoint 7 Science of Sport - HR Training ZonesScience of Sport - How the Pros to	rainScience of	Sport - The me	aning of fitnessScience of Sport	- How fast do v	ve lose fitnessS	Science of Sport	t - The Science	of Perfect Trainin	ngScience of S	port - Why trans	sgender athlete:	threaten fairne	ess in women's	sport
		- continuous training																		
		- high intensity interval training (HIIT)																		
		The use of target heart rates as an intensity guide																		
		Physiological adaptations from aerobic training:																		
		- cardiovascular																		
		- respiratory - muscular																		
		- metabolic																		
		Activities and sports in which aerobic capacity is a key fitness component.									1		1				-			
		- strength endurance - maximum strength								[		1	1							
_		- explosive/elastic strength								[		1	1							
eve		- static and dynamic strength																		
AS L		Factors that affect strength:																		
		- trore type - cross sectional area of the muscle																		
		Mathode of evaluating each tune of strength:																		
		- grip strength dynamometer																		
		- 1 Repetition Maximum(1RM) - press up or sit-up test																		
		- vertical jump test						1				1	1							
	Strength training	Training to develop strength:				Checknoint & Science of Sport - Caster Semanual Evaluation Savy Gendar in Sport				[		1	1							
	surengen training	- repetitions								[		1	1							
		- resistance guidelines used to improve each type of strength						1				1	1							
		- use of multi-gym - weights						1				1	1							
		- plyometrics						1				1	1							
		- circuit/interval training: - work intensity						1					1							
		- work duration						1				1	1							
		- number of work/relief intervals						1				1	1							
		Physiological adaptations from strength training						1				1	1							
		- muscle and connective tissues								[		1	1							
		- neurai			1		1	1	1 1		1	1	1	1	1	1	1			1



	Flexibility training	Types of IntelBilly: - dynamic Reability - dynamic Reability - dynamic Reability - hype of joint - heigh of dynamic Reability: - length of surrounding connective tissue - age - pender Methods of evaluating Reability: - all and reach test - goinomker Training used to develop Reability: - asilve attechting - proprio-petity neuronuscular facilitation (PNF) - salatic stretching - subset is stretc		Checkpoint 8								
	Periodisation of training	Periodisation cycles: - macrocycle - mesocycle - mesocycle - preparatory - preparatory - transition - transit		Checkpoint 8								
	*Acute and chronic injuries	Acute injuries resulting from a sudden stress to the body: - hard tasse injuries - and tasse injuries - concession Chronic hybries resulting from continuous stress to the body: - and tasse hybries.		Checkpoint 9								
A Level	*Injury prevention	Infinition Links Ractions: - Training effects Extension crist Sectors: - poor technique/training - poor technique/training - supportighter Intensity, distantion or Requency of activity - supportighter Intensity, distantion or Requency of activity		Checkpoint 9 Science of Sport - Mary Cain and RED-S								
	*Responding to injuries and medical conditions in a sporting context	Accessing produiting injuries using "GALTAPS" - See - Ask - Ask - Ask - Active - Active - Active - Active - Active - Active - Strength - Active - Rest - Rest - Comparison - Exerction - Rest - Comparison - Comparison - Comparison - Comparison - Comparison - Rest - Rest		Checkpoint 9 Science of Sport - Concussion								
	*Rehabilitation of injury	Treatment of common sporting injuries: - injuries - fractures - simple, stress - indextens - simple, stress - indextens - stresses - exercise-induced muscle damage - exer		Checkpoint 9								
AS Level	Biomechanical principles	Last and apply Newton's laws of motion:     Anewton's laws of		Checkpoint 1								



-											
		- load									
		- effort									
		- effort arm									
	Levers	- load arm		Checkpoint 2							
		1st class lever									
		2nd class lever									
		3rd class lever									
		incentification automage of a situation of the									
		Definitions and uses of:									
	Analysing movement through	- Imb kinematics  - force plates		Ob a share lat 0							
	the use of technology	- wind tunnels		Cneckpoint 2							
		How each type of technology may be used to optimise performance in sport.									
		1.3.b Linear motion, angular motion, fluid mechanics and projectile motion									
		Definition of linear motion.									
		Creation of linear motion by the application of a direct force through the centre of mass									
		Definitions, calculations and units of measurement for each of the following quantities of linear motion:									
		- distance									
	*Linear motion	- speed		Checkpoint 3							
		- velocity									
		- accelerationy deceleration									
		Plot and interpret graphs of linear motion:									
		- distance/ume graphs - speed/time graphs									
		- velocity/time graphs.									
		Definition of angular motion									
		Creation of angular motion through the application of an eccentric force about one (or more) of the									
		three axes of rotation:									
		- frontal									
		- transverse									
		Definitions, calculations and units of measurement for each quantity of angular motion:									
		- moment of inertia									
	*Angular motion	- angular velocity		Checkpoint 4							
		Factors affecting the size of the moment of inertia of a rotating body: mass of the body (or body part)									
		- distribution of the mass from the axis of rotation									
		The relationship between moment of inertia and angular velocity									
-		······································									
V lev		The conservation of angular momentum during flight in relation to the angular analogue of Newton's									
`		Instaw of motion									
		Interpret graphs of angular velocity, moment of inertia and angular momentum.									
		Factors that impact the magnitude of air resistance (on land) or drag (in water) on a body or object:									
	*Fluid mechanics	- velocity - frontal cross-sectional area		Checkpoint 5							
		- streamlining and shape									
		- surface characteristics.									
		- height of release - speed of release									
		- angle of release									
		Free body diagrams showing the forces acting on a projectile once in flight:									
		- weight									
		- air resistance									
		Resolution of forces acting on a projectile in flight using the parallelogram of forces									
		Patterns of flight paths as a consequence of the relative size of air									
		resistance and weight									
	*Projectile motion	<ul> <li>parabolic (symmetrical) flight path - shot put</li> <li>non-parabolic (asymmetric) flight path - badminton shuttle</li> </ul>		Checkpoint 5							
		ne addition of lift to a projectile through the application of Bernoulli's principle: - angle of attack to create an upwards lift force on a projectile:									
		- discus									
		- javelin - ski jumper									
		Design of equipment to create a downwards lift force: - F1 racing cars									
		- track cycling									
		Use of spin in sport to create a Margus force, causing deviations to expected flight paths									
		- imparting spin to a projectile through the application of an eccentric force									
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