PLC – *A’LEVEL Physical Education*

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| **3.1.1 Applied Anatomy and Physiology** | | **Confidence of Knowledge at…** | | | | | |
| **January** | | | **May** | | |
| **3.1.1.1** | **Cardio-respiratory system** | Red | Amber | Green | Red | Amber | Green |
|  | Students should understand the relationship between the cardiovascular and respiratory systems and how changes within these systems prior to exercise, during exercise of differing intensities and during recovery allow the body to meet the demands of exercise. They should also understand how taking part in physical activity and sport, as part of a healthy lifestyle, can have a positive effect on these systems. |  |  |  |  |  |  |
| Understanding of the impact of physical activity and sport on the health and fitness of the individual. | Health (heart disease, high blood pressure, effects of cholesterol, stroke). Fitness (cardiac output – trained and untrained individuals, maximal and submaximal exercise). |  |  |  |  |  |  |
| The hormonal, neural and chemical regulation of responses during physical activity and sport | Anticipatory rise. Redistribution of blood (vascular shunting vasoconstriction, vasodilation).  Cardiac conduction system.  Sympathetic and parasympathetic  Carbon dioxide. |  |  |  |  |  |  |
| Receptors involved in regulation of responses during physical activity. | Chemoreceptor, proprioceptor, baroreceptor. |  |  |  |  |  |  |
| Transportation of oxygen. | Haemoglobin.  Myoglobin.  Oxyhaemoglobin disassociation curve.  Bohr shift. |  |  |  |  |  |  |
| Venous return. | Mechanisms.  Relationship with blood pressure (systolic, diastolic). |  |  |  |  |  |  |
| Starling’s law of the heart |  |  |  |  |  |  |  |
| Cardiovascular drift |  |  |  |  |  |  |  |
| Arterio-venous oxygen difference (A-VO2 diff) | Variations in response to an exercise session.  Variations between trained and untrained individuals.  Adaptations to body systems resulting in training effect. |  |  |  |  |  |  |
| **3.1.1.3** | **Respiratory System** | Red | Amber | Green | Red | Amber | Green |
| Understanding of lung volumes and the impact of and on physical activity and sport. | Residual volume.  Expiratory reserve volume.  Inspiratory reserve volume.  Tidal volume.  Minute Ventilation. |  |  |  |  |  |  |
| Gas exchange systems at alveoli and muscles. | Oxygen and carbon dioxide.  Principles of diffusion and partial pressures |  |  |  |  |  |  |
| The neural and chemical regulation of pulmonary ventilation during physical activity and sport. | Sympathetic and parasympathetic.  Carbon dioxide |  |  |  |  |  |  |
| Receptors involved in regulation of pulmonary ventilation during physical activity | Chemoreceptor, proprioceptor, baroreceptor. |  |  |  |  |  |  |
| Impact of poor lifestyle choices on the respiratory system. | Smoking. Oxygen transport |  |  |  |  |  |  |
| **3.1.1.4** | **Neuromuscular System** | Red | Amber | Green | Red | Amber | Green |
| Characteristics and functions of different muscle fibre types for a variety of sporting activities. | Slow twitch (type I).  Fast glycolytic (type IIx).  Fast oxidative glycolytic (type IIa). |  |  |  |  |  |  |
| Nervous system | Sympathetic and parasympathetic. |  |  |  |  |  |  |
| Role of proprioceptors in PNF | Muscle spindles.  Golgi tendon organ. |  |  |  |  |  |  |
| The recruitment of muscle fibres. | Motor units.  Spatial summation.  Wave summation.  All or none law.  Tetanic. |  |  |  |  |  |  |
| **3.1.1.5** | **The musculo-skeletal system & analysis of movement in physical activities** | Red | Amber | Green | Red | Amber | Green |
| Joint actions in the sagittal plane/transverse axis | Shoulder and hip (flexion, extension and hyperextension).  Elbow and knee (flexion and extension).  Ankle (plantar flexion and dorsi flexion) |  |  |  |  |  |  |
| Joint actions in the frontal plane/sagittal axis | Shoulder and hip (adduction and abduction). |  |  |  |  |  |  |
| Joint actions in the transverse plane/longitudinal axis. | Shoulder and hip (horizontal abduction and adduction). |  |  |  |  |  |  |
| Types of joint, articulating bones, main agonists and antagonists, types of muscle contraction. | Isotonic (concentric and eccentric) and Isometric. |  |  |  |  |  |  |
| **3.1.1.6** | **Energy Systems** | Red | Amber | Green | Red | Amber | Green |
| Energy transfer in the body | Aerobic energy system (glycolosis, kreb/citric acid cycle, beta oxidation, electron transport chain).  Anaerobic energy systems (ATP-PC system, anaerobic glycolytic system). |  |  |  |  |  |  |
| Energy continuum of physical activity | Consideration for physical activity and sport of different intensities and durations.  Differences in ATP generation between fast and slow twitch muscle fibre. |  |  |  |  |  |  |
| Energy transfer during short duration/high intensity exercise | Anaerobic energy system.  ATP-PC system.  Anaerobic glycolytic system (lactate accumulation, lactate threshold, OBLA, lactate producing capacity and sprint/power performance). |  |  |  |  |  |  |
| Energy transfer during long duration/lower intensity exercise. | Aerobic energy system.  Oxygen consumption during exercise (maximal and submaximal oxygen deficit).  Oxygen consumption during recovery (excess post-exercise oxygen consumption EPOC). |  |  |  |  |  |  |
| Factors affecting VO2 max/aerobic power |  |  |  |  |  |  |  |
| Measurements of energy expenditure | Indirect calorimetry.  Lactate sampling.  VO2 max test.  Respiratory exchange ratio (RER). |  |  |  |  |  |  |
| Impact of specialist training methods on energy systems. | Altitude training.  High Intensity Interval Training (HIIT).  Plyometrics.  Speed Agility Quickness |  |  |  |  |  |  |
| **3.1.2 SKILL ACQUISITION** | | **Confidence of Knowledge at…** | | | | | |
| **January** | | | **May** | | |
|  | This section focuses on how skill is acquired and the impact of psychological factors on performance. Students should develop knowledge and understanding of the principles required to optimise learning of new, and the development of existing, skills in a range of physical activities. Students should be able to understand and interpret graphical representations associated with skill acquisition theories. |  |  |  |  |  |  |
| **3.1.2.1** | **Skill, skill continuums & transfer of skills** | Red | Amber | Green | Red | Amber | Green |
| Characteristics of skill |  |  |  |  |  |  |  |
| Use of skill continua. | Open – closed.  Discrete – serial – continuous.  Gross – fine.  Self-paced – externally paced.  High – low.  Simple – complex |  |  |  |  |  |  |
| Justification of skill placement on each of the continua |  |  |  |  |  |  |  |
| Transfer of learning. | Positive.  Negative.  Zero.  Bilateral. |  |  |  |  |  |  |
| Understanding of how transfer of learning impacts on skill development. |  |  |  |  |  |  |  |
| **3.1.2.2** | **Impact of skill classification on structure of practice for learning** | Red | Amber | Green | Red | Amber | Green |
| Methods of presenting practice | Whole.  Progressive part.  Whole–part–whole. |  |  |  |  |  |  |
| Types of practice | Massed.  Distributed.  Variable.  Mental practice. |  |  |  |  |  |  |
| Understanding how knowledge of skill classification informs practice structure (presentation and type) to allow learning/ development of skills. |  |  |  |  |  |  |  |
| **3.1.2.3** | **Principles & theories of learning & performance** | Red | Amber | Green | Red | Amber | Green |
| Stages of learning and how feedback differs between the different stages of learning. | Cognitive, associative, autonomous. |  |  |  |  |  |  |
| Learning plateau | Causes and solutions. |  |  |  |  |  |  |
| Cognitive theories. | Insight learning (Gestalt). |  |  |  |  |  |  |
| Behaviourism. | Operant conditioning (Skinner) |  |  |  |  |  |  |
| Social learning. | Observational learning (Bandura). |  |  |  |  |  |  |
| Constructivism. | Social development theory (Vygotsky). |  |  |  |  |  |  |
| Understanding of how theories of learning impact on skill development. |  |  |  |  |  |  |  |
| **3.1.2.4** | **Use of guidance & feedback** | Red | Amber | Green | Red | Amber | Green |
| Methods of guidance. | Verbal.  Visual.  Manual.  Mechanical. |  |  |  |  |  |  |
| Understand the different purposes and types of feedback. | Knowledge of performance.  Knowledge of results.  Positive and negative.  Intrinsic.  Extrinsic. |  |  |  |  |  |  |
| Understanding of how feedback and guidance impacts on skill development. |  |  |  |  |  |  |  |
| **3.1.2.5** | **Memory Models** |  |  |  |  |  |  |
| **3.1.2.5.1** | **General information processing model, to include :** | Red | Amber | Green | Red | Amber | Green |
| Input. | Senses.  Receptors.  Proprioception.  Perception.  DCR process  Selective attention |  |  |  |  |  |  |
| Decision making | Short and long term memory |  |  |  |  |  |  |
| Baddeley and Hitch, working memory model memory system. | Functions and characteristics of components of working memory model. |  |  |  |  |  |  |
| Output. |  |  |  |  |  |  |  |
| Feedback. |  |  |  |  |  |  |  |
| **3.1.2.5.2** | **Efficiency of information processing to include:** | Red | Amber | Green | Red | Amber | Green |
| Application of Whiting’s information processing model to a range of sporting contexts. |  |  |  |  |  |  |  |
| Applied understanding of information processing terms within a sporting context. | Environment.  Display.  Sensory organs.  Perceptual mechanism.  Translatory mechanism.  Effector mechanism.  Muscular system output data.  Feedback data. |  |  |  |  |  |  |
| Definitions of and the relationship between reaction time, response time, movement time. | Simple reaction time.  Choice reaction time. |  |  |  |  |  |  |
| Factors affecting response time | Hick’s law.  Psychological refractory period.  Single channel hypothesis |  |  |  |  |  |  |
| Definitions of anticipation. | Temporal.  Spatial. |  |  |  |  |  |  |
| Strategies to improve response time |  |  |  |  |  |  |  |
| Schmidt’s schema theory. | Recall.  Recognition.  Initial conditions.  Response specifications.  Sensory consequences.  Response outcomes. |  |  |  |  |  |  |
| Application of schema theory in sporting situations. |  |  |  |  |  |  |  |
| Strategies to improve information processing. | Input – selective attention  Decision making process – chunking, chaining, response time, schema |  |  |  |  |  |  |
| **3.1.3 Sport & Society** | | **Confidence of Knowledge at…** | | | | | |
| **January** | | | **May** | | |
|  | Students should develop knowledge and understanding of the interaction between, and the evolution of, sport and society. Students should be able to understand, interpret and analyse data and graphs relating to participation in physical activity and sport. |  |  |  |  |  |  |
| **3.1.3.1** | **Emergence of globalization of sport in the 21st century** |  |  |  |  |  |  |
| **3.1.3.1.1** | **Pre-industrial (Pre-1780)** | Red | Amber | Green | Red | Amber | Green |
| Characteristics of society and impact on sporting recreation. | Two-tier class system.  Rural Limited communication/technology/transport  Widespread illiteracy  Harsh lifestyle |  |  |  |  |  |  |
| Characteristics of sporting recreation (limited to mob football and real tennis. |  |  |  |  |  |  |  |
| **3.1.3.1.2** | **Industrial & post-industrial (1780-1900)** | Red | Amber | Green | Red | Amber | Green |
| Characteristics and impact on sport (limited to development of association football, lawn tennis, rationalisation of track and field events and the role of the Wenlock Olympian Games). | Industrial Revolution.  Urbanisation.  Transport and communication.  The British Empire.  Provision through factories.  Churches and local authorities.  Public schools/universities  Three-tier class system (emphasis on middle class and working class). Development of national governing bodies.  Consideration of the changing role of women in sport.  The status of amateur and professional performers. |  |  |  |  |  |  |
| **3.1.3.1.3** | **Post World War II (1950-present)** | Red | Amber | Green | Red | Amber | Green |
| Characteristics and impact of the Golden Triangle (limited to development of association football, tennis and athletics). | The interrelationship between commercialisation (including sponsorship), media (radio, TV, satellite, internet and social media) and sports and governing bodies. |  |  |  |  |  |  |
| The changing status of amateur and professional performers (limited to development of association football, tennis and athletics). |  |  |  |  |  |  |  |
| Factors affecting the emergence of elite female performers in football (players and officials), tennis and athletics in late 20th and early 21st century. | Characteristics of football, athletics and tennis. |  |  |  |  |  |  |
| **3.1.3.2** | **The impact of sport on society & of society on sport** |  |  |  |  |  |  |
| **3.1.3.2.1** | **Sociological theory applied to equal opportunities** | Red | Amber | Green | Red | Amber | Green |
| Understanding of the key terms relating to the study of sport and their impact on equal opportunities in sport and society. | Society.  Socialisation (primary and secondary).  Social processes (social control and social change).  Social issues (causes and consequences of inequality).  Social structures/stratification (eg schools/ sports clubs). |  |  |  |  |  |  |
| Understanding social action theory in relation to social issues in physical activity and sport. | Impact of sport on society and of society on sport. |  |  |  |  |  |  |
| Underrepresented groups in sport | Disability.  Ethnic group.  Gender.  Disadvantaged.  Disability.  Ethnic group.  Gender.  Disadvantaged. |  |  |  |  |  |  |
| Understanding the key terms relating to equal opportunities. | Discrimination  Stereotyping  Prejudice |  |  |  |  |  |  |
| The barriers to participation in sport and physical activity and possible solutions to overcome them for under represented groups in sport. |  |  |  |  |  |  |  |
| Benefits of raising participation | Health benefits.  Fitness benefits.  Social benefits. |  |  |  |  |  |  |
| **3.2 Factors affecting optimal performance in physical activity & sport** | | **Confidence of Knowledge at…** | | | | | |
| **January** | | | **May** | | |
| **3.2.1** | **Exercise physiology** |  |  |  |  |  |  |
| **3.2.1.1** | **Diet & nutrition & their effect on physical activity & performance** | Red | Amber | Green | Red | Amber | Green |
| Understand the exercise-related function of food classes. | Carbohydrate.  Fibre.  Fat (saturated fat, trans fat and cholesterol), protein, vitamins (C,D, B-12, B-complex), minerals (sodium, iron, calcium), water (hydration before, during and after physical activity). |  |  |  |  |  |  |
| Positive and negative effects of dietary supplements/manipulation on the performer | Creatine, sodium bicarbonate, caffeine, Glycogen loading. |  |  |  |  |  |  |
| **3.2.1.2** | **Preparation & training methods in relation to maintaining physical activity & performance** | Red | Amber | Green | Red | Amber | Green |
| Understanding of the key terms relating to laboratory conditions and field tests. | Quantitative and qualitative.  Objective and subjective.  Validity and reliability. |  |  |  |  |  |  |
| Physiological effects and benefits of a warm-up and cool down. | Stretching for different types of physical activity (static and ballistic). |  |  |  |  |  |  |
| Principles of training. | Specificity, progressive overload, reversibility, recovery, Frequency Intensity Time Type of Training (FITT) principles. |  |  |  |  |  |  |
| Application of principles of periodisation. | Macro cycle, Meso cycle, Micro cycle.  Preparation, competition, transition.  Tapering, peaking. |  |  |  |  |  |  |
| Training methods to improve physical fitness and health. | HIIT/interval training (anaerobic power).  Continuous training (aerobic power).  Fartlek (aerobic power).  Circuit training (muscular endurance).  Weight training (strength).  Proprioceptive Neuromuscular Facilitation (PNF) (flexibility). |  |  |  |  |  |  |
| **3.2.1.3** | **Injury prevention & the rehabilitation of injury** | Red | Amber | Green | Red | Amber | Green |
| Types of injury. | Acute (fractures, dislocations, strains, sprains).  Chronic (achilles tendonitis, stress fracture, ‘tennis elbow’).  Acute (fractures, dislocations, strains, sprains).  Chronic (achilles tendonitis, stress fracture, ‘tennis elbow’). |  |  |  |  |  |  |
| Understanding different methods used in injury prevention, rehabilitation and recovery | Injury prevention methods: Screening.  Protective equipment.  Warm up, flexibility training (active, passive, static and ballistic), taping and bracing.  Injury rehabilitation methods (proprioceptive training, strength training, hyperbaric chambers, cryotherapy, hydrotherapy).  Recovery from exercise (compression garments, massage/foam rollers, cold therapy, ice bath, cryotherapy). |  |  |  |  |  |  |
| Physiological reasons for methods used in injury rehabilitation. | Hyperbaric chambers, cryotherapy. |  |  |  |  |  |  |
| Importance of sleep and nutrition for improved recovery |  |  |  |  |  |  |  |
| **3.2.2 Biomechanical movement** | | **Confidence of Knowledge at…** | | | | | |
| **January** | | | **May** | | |
|  | Students should develop knowledge and understanding of motion and forces, and their relevance to performance in physical activity and sport. Students should have a knowledge and use of biomechanical definitions, equations, formulae and units of measurement and demonstrate the ability to plot, label and interpret biomechanical graphs and diagrams. |  |  |  |  |  |  |
| **3.2.2.1** | **Biomechanical Principles** | Red | Amber | Green | Red | Amber | Green |
| Newton’s Three Laws of linear motion applied to sporting movements | First law (inertia), second law (acceleration), third law (action/reaction). Force. |  |  |  |  |  |  |
| Definitions, equations and units of example scalars. | Speed, distance. |  |  |  |  |  |  |
| Centre of mass. |  |  |  |  |  |  |  |
| Factors affecting stability. | Height of centre of mass, area of base of support, position of line of gravity and body mass. |  |  |  |  |  |  |
| **3.2.2.2** | **Levers** | Red | Amber | Green | Red | Amber | Green |
| Three classes of lever and examples of their use in the body during physical activity and sport. |  |  |  |  |  |  |  |
| Mechanical advantage and mechanical disadvantage of each class of lever. |  |  |  |  |  |  |  |
| **3.2.2.3** | **Linear motion** | Red | Amber | Green | Red | Amber | Green |
| An understanding of the forces acting on a performer during linear motion. | Gravity, frictional force, air resistance, internal-muscular force, weight |  |  |  |  |  |  |
| Definitions, equations and units of vectors. | Weight, velocity, displacement, acceleration and momentum. |  |  |  |  |  |  |
| Definitions, equations and units of scalars | Mass, speed and distance. |  |  |  |  |  |  |
| The relationship between impulse and increasing and decreasing momentum in sprinting through the interpretation of force/time graphs. |  |  |  |  |  |  |  |
| **3.2.2.4** | **Angular motion** | Red | Amber | Green | Red | Amber | Green |
| Application of Newton’s laws to angular motion |  |  |  |  |  |  |  |
| Definitions and units for angular motion | Angular displacement, angular velocity, angular acceleration. |  |  |  |  |  |  |
| Conservation of angular momentum during flight, moment of inertia and its relationship with angular velocity. |  |  |  |  |  |  |  |
| **3.2.2.5** | **Projectile motion** | Red | Amber | Green | Red | Amber | Green |
| Factors affecting horizontal displacement of projectiles. |  |  |  |  |  |  |  |
| Factors affecting flight paths of different projectiles. | Shot put, badminton shuttle |  |  |  |  |  |  |
| Vector components of parabolic flight. |  |  |  |  |  |  |  |
| **3.2.2.6** | **Fluid mechanics** | Red | Amber | Green | Red | Amber | Green |
| Dynamic fluid force. | Drag and lift |  |  |  |  |  |  |
| Factors that reduce and increase drag and their application to sporting situations. |  |  |  |  |  |  |  |
| The Bernoulli principle applied to sporting situations. | Upward lift force (discus).  Downward lift force (speed skiers, cyclists, racing cars). |  |  |  |  |  |  |
| **3.2.3 Sports psychology** | | **Confidence of Knowledge at…** | | | | | |
| **January** | | | **May** | | |
|  | In this section students will develop knowledge and understanding of the role of sport psychology in optimising performance in physical activity and sport. Students should be able to understand and interpret graphical representations associated with sport psychology theories. |  |  |  |  |  |  |
| **3.2.3.1** | **Psychological factors that can influence an individual in physical activities** |  |  |  |  |  |  |
| **3.2.3.1.1** | **Aspects of personality** | Red | Amber | Green | Red | Amber | Green |
| Understanding of the nature vs nurture debate in the development of personality | Trait, social learning. |  |  |  |  |  |  |
| Interactionist perspective. | Hollander, Lewin. |  |  |  |  |  |  |
| How knowledge of interactionist perspective can improve performance. |  |  |  |  |  |  |  |
| **3.2.3.1.2** | **Attitudes** | Red | Amber | Green | Red | Amber | Green |
| Triadic model. | Components of an attitude.  Formation of attitudes.  Changing attitudes through cognitive dissonance and persuasive communication. |  |  |  |  |  |  |
| **3.2.3.1.3** | **Arousal** | Red | Amber | Green | Red | Amber | Green |
| Theories of arousal. | Drive theory, inverted U theory, catastrophe theory and zone of optimal functioning theory |  |  |  |  |  |  |
| Practical applications of theories of arousal and their impact on performance |  |  |  |  |  |  |  |
| Characteristics of peak flow experience |  |  |  |  |  |  |  |
| **3.2.3.1.4** | **Anxiety** | Red | Amber | Green | Red | Amber | Green |
| Types of anxiety | Somatic, cognitive, competitive trait and competitive state. |  |  |  |  |  |  |
| Advantages and disadvantages of using observations, questionnaires and physiological measures to measure anxiety. |  |  |  |  |  |  |  |
| **3.2.3.1.5** | **Aggression** | Red | Amber | Green | Red | Amber | Green |
| Difference between aggression and assertive behaviour. |  |  |  |  |  |  |  |
| Theories of aggression | Instinct theory, frustration-aggression hypothesis, social learning theory and aggressive cue theory. |  |  |  |  |  |  |
| Strategies to control aggression. |  |  |  |  |  |  |  |
| **3.2.3.1.6** | **Motivation** | Red | Amber | Green | Red | Amber | Green |
| Motivation. |  |  |  |  |  |  |  |
| **3.2.3.1.7** | **Achievement motivation theory** | Red | Amber | Green | Red | Amber | Green |
| Atkinson’s Model of achievement motivation |  |  |  |  |  |  |  |
| Characteristics of personality components of achievement motivation. | Need to achieve (Nach) and Need to avoid failure (Naf). |  |  |  |  |  |  |
| Impact of situational component of achievement motivation. | Incentive value and probability of success |  |  |  |  |  |  |
| Achievement goal theory | Impact of outcome orientated goals and task orientated goals |  |  |  |  |  |  |
| Strategies to develop approach behaviours leading to improvements in performance |  |  |  |  |  |  |  |
| **3.2.3.1.8** | **Social facilitation** | Red | Amber | Green | Red | Amber | Green |
| Social facilitation and inhibition. | Zajonc’s model. |  |  |  |  |  |  |
| Evaluation apprehension. |  |  |  |  |  |  |  |
| Strategies to eliminate the adverse effects of social facilitation and social inhibition |  |  |  |  |  |  |  |
| **3.2.3.1.9** | **Group dynamics** | Red | Amber | Green | Red | Amber | Green |
| Group formation. | Tuckman’s model. |  |  |  |  |  |  |
| Cohesion. | Task and social |  |  |  |  |  |  |
| Steiner’s model of potential and actual productivity, faulty group processes. | Including cooperation and coordination. |  |  |  |  |  |  |
| Ringelmann effect and social loafing. |  |  |  |  |  |  |  |
| Strategies to improve cohesion, group productivity and overcome social loafing to enhance team performance |  |  |  |  |  |  |  |
| **3.2.3.1.10** | **Importance of goal setting** | Red | Amber | Green | Red | Amber | Green |
| Benefits of types of goal setting. | Outcome goals, performance related goals, process goals |  |  |  |  |  |  |
| Principles of effective goal setting. | SMARTER (specific, measurable, achievable, realistic, time bound, evaluate, re-do). SMARTER (specific, measurable, achievable, realistic, time bound, evaluate, re-do). |  |  |  |  |  |  |
| **3.2.3.1.11** | **Attribution theory** | Red | Amber | Green | Red | Amber | Green |
| Attribution process. |  |  |  |  |  |  |  |
| Weiner’s Model and its application to sporting situations. |  |  |  |  |  |  |  |
| Link between attribution, task persistence and motivation. |  |  |  |  |  |  |  |
| Self-serving bias. |  |  |  |  |  |  |  |
| Attribution retraining |  |  |  |  |  |  |  |
| Learned helplessness | General and specific |  |  |  |  |  |  |
| Strategies to avoid learned helplessness leading to improvements in performance |  |  |  |  |  |  |  |
| **3.2.3.1.12** | **Self-efficacy & confidence** | Red | Amber | Green | Red | Amber | Green |
| Characteristics of self-efficacy, self-confidence and self-esteem. |  |  |  |  |  |  |  |
| Bandura’s Model of self-efficacy | Performance accomplishments, vicarious experiences, verbal persuasion and emotional arousal. |  |  |  |  |  |  |
| Vealey’s Model of self-confidence. | Relationship between trait sport confidence, competitive orientation, the sport situation and state sport confidence. |  |  |  |  |  |  |
| Effects of home field advantage |  |  |  |  |  |  |  |
| Strategies to develop high levels of self-efficacy leading to improvements in performance. |  |  |  |  |  |  |  |
| **3.2.3.1.13** | **Leadership** | Red | Amber | Green | Red | Amber | Green |
| Characteristics of effective leaders |  |  |  |  |  |  |  |
| Styles of leadership | Autocratic, democratic, laissez-faire |  |  |  |  |  |  |
| Leadership styles for different sporting situations. |  |  |  |  |  |  |  |
| Prescribed and emergent leaders. |  |  |  |  |  |  |  |
| Theories of leadership in different sporting situations. | Fiedler’s contingency theory and Chelladurai’s multi-dimensional model. |  |  |  |  |  |  |
| **3.2.3.1.14** | **Stress management** | Red | Amber | Green | Red | Amber | Green |
| Explanation of the terms ‘stress’ and ‘stressor’. |  |  |  |  |  |  |  |
| Use of warm up for stress management. |  |  |  |  |  |  |  |
| Effects of cognitive and somatic techniques on the performer. |  |  |  |  |  |  |  |
| Explanation of cognitive techniques | Mental rehearsal.  Visualisation.  Imagery.  Attentional control and cue utilisation.  Thought stopping.  Positive self-talk |  |  |  |  |  |  |
| Explanation of somatic techniques. | Biofeedback, centering, breathing control, progressive muscle relaxation. |  |  |  |  |  |  |
| **3.2.4 Sport & society & the role of technology in physical activity & sport** | | **Confidence of Knowledge at…** | | | | | |
| **January** | | | **May** | | |
|  | Students should develop knowledge and understanding of the interaction between, and the evolution of, sport and society and the technological developments in physical activity and sport. |  |  |  |  |  |  |
| **3.2.4.1** | **Concepts of physical activity & sport** | Red | Amber | Green | Red | Amber | Green |
| The characteristics and functions of key concepts and how they create the base of the sporting development continuum | Physical recreation.  Sport.  Physical education.  School sport. |  |  |  |  |  |  |
| The similarities and the differences between these key concepts. |  |  |  |  |  |  |  |
| **3.2.4.2** | **Development of elite performance in sport** | Red | Amber | Green | Red | Amber | Green |
| The factors required to support progression from talent identification to elite performance. |  |  |  |  |  |  |  |
| The generic roles, purpose and the relationship between organisations in providing support and progression from talent identification through to elite performance. | National Governing Bodies.  National Institutes of Sport.  UK Sport. |  |  |  |  |  |  |
| The support services provided by National Institutes of Sports for talent development |  |  |  |  |  |  |  |
| The key features of UK Sport’s World Class Performance Programme, Gold Event Series and Talent Identification and Development. | Or equivalent current named programmes. |  |  |  |  |  |  |
| **3.2.4.3** | **Ethics in sport** | Red | Amber | Green | Red | Amber | Green |
| Understanding of the key terms relating to ethics in sport | Amateurism, the Olympic Oath, sportsmanship, gamesmanship, win ethic |  |  |  |  |  |  |
| Positive and negative forms of deviance in relation to the performer |  |  |  |  |  |  |  |
| **3.2.4.4** | **Violence in sport** | Red | Amber | Green | Red | Amber | Green |
| The causes and implications of violence in sport | Performer  Spectator  Sport |  |  |  |  |  |  |
| Strategies for preventing violence within sport to the performer and spectator. |  |  |  |  |  |  |  |
| **3.2.4.5** | **Drugs in sport** | Red | Amber | Green | Red | Amber | Green |
| The social and psychological reasons behind elite performers using illegal drugs and doping methods to aid performance. |  |  |  |  |  |  |  |
| The physiological effects of drugs on the performer and their performance | Erythropoietin (EPO).  Anabolic steroids.  Beta blockers. |  |  |  |  |  |  |
| The positive and negative implications to the sport and the performer of drug taking | Physiological adaptations.  Social and psychological rewards (for the sport and the performer). Negative impact on current and future health.  Social and psychological repercussions (for the sport and the performer) |  |  |  |  |  |  |
| Strategies for elimination of performance enhancing drugs in sport. |  |  |  |  |  |  |  |
| Arguments for and against drug taking and testing. | Testing procedures will not be examined. |  |  |  |  |  |  |
| **3.2.4.6** | **Sport & the law** | Red | Amber | Green | Red | Amber | Green |
| The uses of sports legislation | Performers (contracts, injury, loss of earnings).  Officials (negligence).  Coaches (duty of care).  Spectators (safety, hooliganism). |  |  |  |  |  |  |
| **3.2.4.7** | **Impact of commercialization on physical activity & sport & the relationship between sport & the media** | Red | Amber | Green | Red | Amber | Green |
| The positive and negative impact of commercialisation, sponsorship and the media. | Performer.  Coach.  Official.  Audience.  Sport. |  |  |  |  |  |  |
| **3.2.4.8** | **The role of technology in physical activity & sport** | Red | Amber | Green | Red | Amber | Green |
| Understanding of technology for sports analytics. | Use of technology in data collection (quantitative and qualitative, objective and subjective, validity and reliability of data).  Video and analysis programmes.  Testing and recording equipment (metabolic cart for indirect calorimetry).  Use of GPS and motion tracking software and hardware.  Maintaining data integrity |  |  |  |  |  |  |
| Functions of sports analytics. | Monitor fitness for performance.  Skill and technique development.  Injury prevention.  Game analysis.  Talent ID/scouting |  |  |  |  |  |  |
| The development of equipment and facilities in physical activity and sport, and their impact on participation and performance. | Impact of material technology on equipment – adapted (disability, age).  Facilities – Olympic legacy, (surfaces, multiuse). |  |  |  |  |  |  |
| The role of technology in sport and its positive and negative impacts. | Sport.  Performer.  Coach.  Audience. |  |  |  |  |  |  |
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**Glossary of key terms**

The following is a list of all the key terms from the content for Components 1 and 2 and their standard definitions. This list is not exhaustive but is a guide to the terms students will be expected to know and understand for use in the examination papers. Terms from outside the list can be assessed.

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| **Key word** | **Definition** |
| Actin | Thin protein filament found in the myofibril. |
| Adenosine tri phosphate  (ATP) | The energy currency of the body, found in all cells, when broken down it releases stored energy. |
| Advertising | Using sport to promote goods or services for sale in order to make it more well-known/promote it. |
| Aerobic | With oxygen. |
| Aggression | In sport, behaviour intended to harm another person, either physiologically or psychologically, outside  the laws of the game. |
| Agonist | Muscle primarily responsible for a given movement. |
| All or None Law | Each muscle fibre within a motor unit either contract or do not contract; there is no such thing as a  partial contraction. |
| Americanisation | The influence American sport has on the values of sport in other countries. |
| Angular momentum | The amount of motion a body has during rotation. Angular momentum = angular velocity x moment of inertia |
| Angular velocity | The rate of movement in rotation. |
| Antagonist | A muscle that opposes an agonist for a given movement and prevent overstretching of the agonist. |
| Anxiety | A negative aspect of stress, worries over the possibility of failure. |
| Arousal | The state of general preparedness of the body for action involving both physiological and psychological  factors. |
| Assertion | The use of physical force that is within the rules or ethics of a sport and is therefore legitimate. |
| Athlete | A player/performer in any activity. |
| Behavioural anxiety | Feelings of tension, agitation or restlessness as a result of anxiety. |
| Bernoulli effect | Relationship between velocity and pressure which act on an object as it moves through a fluid/air, for  example a ball in flight. |
| Bradycardia | The reduction in resting heart rate that accompanies training. Resting heart rate below 60 beats per  minute. |
| Bracketed morality | The suspension of ethics, or morality, during competition. |
| Bungs | Secret payments between an agent and member of staff at a football club as part of football transfers. |
| Centering | Using deep breathing as a way to refocus your concentration. |
| Centre of mass | The point where all the mass of a body is concentrated and the sum of all the moments of inertia of the  body is zero. |
| Chunking | Simplifying an action by reducing it into smaller parts. |
| Clarendon Commission | A royal commission set up in 1864 to investigate the great public schools. |
| Cognitive dissonance | Tension resulting from having contradictory thoughts or beliefs about something or someone. |
| Cognitive anxiety | Thoughts, nervousness, apprehension or worry that a performer has about their lack of ability to  complete a task successfully. |
| Commercialisation | The treating of sport as a commodity, involving the buying and selling of assets, with the market as the  driving force behind sport. |
| Continuous skill | A movement with no clear beginning and end One end phase of the movement blends into the start of  the next phase of the cycle. |
| Dehydration | The condition which occurs when the amount of water in the body falls below normal, disrupting the  balances of sugars and salt (electrolytes) in the body. |
| Deviance | Behaviour that falls outside the norms or outside what is deemed to be acceptable (can be positive or negative). |
| Discrete skill | A movement with a clear beginning and end. |

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| Displacement | The shortest straight line measurement between two points. |
| Electrolytes | Ions (electrically charged particles) of salts such as sodium. |
| Electrolyte balance | The proportion/concentration of electrolytes within the fluids of the body. |
| Encoding | Storing information in memory. |
| Endorsement | Giving approval to a product or service and receiving payment in return. |
| Feedback | Any information received by the learner during or after a performance about the performance. |
| Fixator | A muscle which allows the prime mover to work more efficiently by stabilising the bone where the prime mover originates. |
| Franchises | An authorisation given by a league to own a sports team. |
| Gamesmanship | Bending the rules/laws of a sport to gain an unfair advantage without actually breaking the rules, for example time wasting. |
| Glycolysis | Process of breaking down glycogen into pyruvic acid, producing some (4) ATP. |
| Golden Triangle | The link between sports events, sponsorship by businesses, and the media. |
| Guidance | Information to aid the learning of a skill. This information can be given visually, e.g. through demonstrations; verbally, e.g. by the coach explaining how to perform the technique; manually, e.g.by physically moving a performer into the correct position; and mechanically, e.g. using a harness in  trampolining. |
| Hick’s Law | Relationship between number of responses and choice reaction time. The more choices there are  available, the slower the reaction time. As the number of choices increases, so does reaction time. |
| Horizontal component | The horizontal motion of an object in parabolic flight. |
| Hull’s Drive Theory | Theory of arousal that suggests a linear relationship between arousal and performance; as arousal  increases so does performance. |
| Hydration | Being hydrated means the body has the correct amount of water in cells, tissues and organs to function  correctly. |
| Hypertonic drinks | When the glucose osmolality of the drink is greater than the blood. |
| Hypotonic drinks | When the glucose osmolality of the drink is lower than the blood. |
| Industrialisation | Mechanisation of the manufacturing industry. |
| Inverted U hypothesis | Theory of arousal that suggests that optimal performance occurs when the performer reaches an  optimal level of arousal. |
| Intangible rewards | External rewards that cannot be touched, for example cheering from the crowd, congratulations from  the team or coach. |
| Isotonic drinks | When the glucose osmolality of the drink is the same as blood |
| Karvonen’s Theory | A method of calculating target heart rate zone. (Heart rate range x intensity%) = (resting heart rate) |
| Learned helplessness | The belief that failure is inevitable because of negative previous experiences. |
| Locus of causality | The internal/external factors that a performer believes caused an event or outcome. |
| Locus of stability | The stable/unstable factors that a performer believes caused an event or outcome. |
| Locus of control | The extent to which a performer believes that the outcome was within their control (or not). |
| Magnus effect | The generation of a sideways force on a spinning object due to the pressure differences that develop as  a result of velocity changes caused by the spinning object, e.g. a ‘curve’ on a served tennis ball. |
| Massed practice | Practice that occurs without rest between trials. |
| Mental practice | The mental or cognitive rehearsal of a skill or movement, with no actual physical movement taking  place. |
| Merchandising | The practice in which the brand or image from one product is used to sell another, usually by  professional sports teams and their players. |
| Moment of inertia | The resistance of a body to a change of state when rotating. |
| Motor neurones | Nerves that carry information from the central nervous system to the skeletal muscles. |
| Motor units | A motor neurone and the muscle fibres it controls. |
| Movement time | Time from the start of the response or movement to the completion of the movement. |
| Myofibril | Part of a muscle fibre contains sarcomeres and the contractile proteins actin and myosin. |
| Myoglobin | Protein found in the sarcoplasm. It has a high affinity for oxygen and helps transport oxygen from the  capillary to the mitochondria. |
| Myosin | Thick protein filament found in the myofibril. |
| Need to Achieve (nACH) | The motivation to succeed or attain particular goals; people with nACH personalities show approach  behaviour. |

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| Need to Avoid Failure  (nAF) | The motivation to avoid failure; people with nAF personalities show avoidance behaviour. |
| Optimal loading | A rehabilitation programme to encourage faster recovery. |
| Oxbridge melting pot | Oxbridge or the universities became a ‘melting pot’ for games. Different games were taken to Oxbridge  where they mixed and became standardised version of game/s. |
| Part practice | A method of practice where the skill is broken down into sub-routines. |
| Partial pressure | The pressure a gas exerts in a mixture of gases. |
| Pay-per-view | A system by which he television viewer can pay for a private telecast to their home of an event. |
| Perception | The process of acquiring, selecting and organising sensory information. |
| Performance goals | Goals related to performance which can be judged against other performances. |
| Periodisation | Dividing the overall training programme into parts/periods that are designed to achieve different goals. |
| Phosphocreatine (PC) | An energy-rich compound of creatine and phosphoric acid, found in the muscle cells. |
| Popular recreations | Sporting activities before the industrial revolution. |
| Pressure gradient | When there is a difference in neighbouring or adjoining pressures. |
| Process goals | Goals over which an individual has complete control in order to deal with the technique/tactic needed to perform well, for example run at 5 minute mile pace. They help focus attention and reduce anxiety. |
| Progressive part practice | A method of practice where the skill is broken down into parts, each part learnt and then linked in and  practised as a sequence. |
| Prime mover | The muscle that is directly responsible for creating the movement produced at a joint. |
| Psychological Refractory Period. | The delay in response to the second of two closely spaced stimuli. This is as result of the single channel hypothesis the PRP is due to the brain’s inability to deal with two stimuli simultaneously e.g. dodging or  feinting to go one way then going another. |
| Rate of Perceived Exertion (RPE) | A subjective rating (on the Borg Scale) of how hard the performer thinks their body is working based on  their physical sensations during exercise such as increased heart rate, breathing rate, sweating and muscle fatigue. |
| Rationalisation | A term associated with the development of sport that occurred during the industrial revolution,  resulting in the codification and organisation of modern sport. |
| Reaction time | Time taken to make a decision. |
| Reinforcement | Process by which a connection (bond) between a stimulus and a response is established and developed. |
| Re- phosphorylisation | Resynthesis of phosphate to convert ADP back into Phosphocreatine (PC) and ATP. |
| Response time | Time from the stimulus being given to the end of the response. = reaction time + movement time |
| Ringleman Effect | The diminishing contribution of each individual as group size increases. |
| Selective attention | The process of picking out and focusing on those parts of the display that are relevant to performance  and filtering out irrelevant information. |
| Self-confidence | A person’s belief in their ability to achieve success. |
| Self-efficacy | Situation-specific self-confidence. |
| Serial skill | A series of specific (discrete) movements chained together in a sequence. |
| Shamateurism | The blurring of the distinction between amateurs and professionals as a result of the commercialisation  of sport, resulting in a compromise in the ethics associated with an amateur. |
| Shin splints (Periostitis) | Inflammation of the periosteum of the tibia brought on by exercise or overtraining. |
| Significant other | People who are held in high regard by an individual. |
| Social facilitation | The influence of the presence of others on performance. These others could be in the audience or  performing in the same activity (called co- actors). |
| Social inhibition | Decrease in performance due to the presence of others. |
| Social loafing | Loss of individual effort in a group due to fall in motivation or lack of personal identity. |
| Somatic anxiety | Physiological responses to a situation where a performer feels that they may be unable to cope  (symptoms include sweaty palms, increased heart rate, feelings of nausea). |
| Sponsorship | Provision of funds or other forms of support to an individual or event to in return for some commercial  return. |
| Sportsmanship | Conforming to the rules, spirit and etiquette of a sport. |
| State anxiety | (A-trait) anxiety felt in a particular situation. |
| Synergist | A muscle which aids the action of a prime mover by stabilising the joint at which the prime mover acts. |
| Tangible rewards | Rewards that can be touched, held or have physical substance, for example medals, money, trophies. |
| Trait anxiety | (A-trait) an enduring personality trait, giving a tendency to view all situations as threatening. |

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| Tropomyosin | Thread-like protein that winds around the surface of actin. |
| Troponin | Globular protein on actin filament. |
| Type I | Also known as slow twitch muscle fibres, they are suited to low intensity aerobic work, can be used for a long period of time without fatiguing. |
| Type IIa | These are fast oxidative glycotic muscle fibres, fast contraction, large force, fatigue easily. They are used in anaerobic work, but can be improved through endurance training to increase their resistance to  fatigue. |
| Type IIx  (previously type IIb) | These are fast glycotic muscle fibres, very rapid contractions, very large forces, fatigues very easily.  They are used in anaerobic work. |
| Urbanisation | Development of cities caused by the movement of the working population from rural areas (where jobs were disappearing as a result of mechanisation) to towns (where new jobs were being created in  factories). |
| Vertical component | The upward motion of an object in parabolic flight curve. |
| Wave summation | An increase in contraction strength as result of muscles that are rapidly stimulated being unable to  relax between repeated stimulations. |
| Whole-part-whole practice | Skill is practised as a whole then broken into parts, a part is practised, then the skill is practised as a  whole again. |
| Whole practice | The complete skill is practices without breaking it down into sub- routines. |
| World Anti-Doping Agency  (WADA) | The agency responsible for promoting, coordinating and monitoring at international level the fight  against the use of drugs in sport. |

# Command word taxonomy

This appendix lists all the command words, along with their definitions, that may appear in the examination papers for Components 1 and 2.

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| **Command**  **Word** | **Definition** |
| Assess | An account of something with the relative importance of ideas balanced against each other and an evaluative  statement. |
| Analyse | Examine something methodically and in detail, typically in order to explain and interpret it. |
| Calculate | Obtain a numerical answer, showing relevant working. If the answer has a unit, this must be included. |
| Classify | Group or place on a scale. |
| Compare | Explore similarities and differences between two or more factors. |
| Consider | Analysis of a stimulus to make a judgement. |
| Define | Statement of translation. |
| Describe | An account of something without reasons. |
| Discuss | Explore issues, lines of reasoning and situations, articulating different viewpoints. |
| Examine | Justification or exemplification of a point using analysis or evaluation. |
| Explain | How and why, the meaning of something with reasons. |
| Evaluate | Use analysis to make a judgement. |
| Give | The recall of a fact or an example. |
| Identify | Establish or indicate who or what someone or something is. |
| Interpret | Explain the meaning of something with reference to a stimulus. |
| Justify | Articulate a viewpoint with reasons. |
| List | The recall of a series of names or things. |
| Name | The recall of a word or set of words by which someone or something is known. |
| Outline | A brief outline of non-linked points. |
| State | The recall of a fact or an example. |
| Suggest | Analysis and evaluation of a data based stimulus. |
| Summarise | Express the most important facts or ideas about something. |
| Using an example | Often used with explain or describe where it requires an example to exemplify the point(s) being made. |