Belfairs Academy

PE Fundamentals Map

Knowledge	Skill
Learners must know t**he contribution which physical activity makes to health and fitness**	Learners will know what health and fitness is and how physical activity can impact on these areas.
Learners must know the benefits of an active, healthy lifestyle and the consequences of adopting a sedentary lifestyle.	Learners will be able to discuss the how leading an active life can be beneficial and what consequences are caused through a lack of a healthy lifestyle.
Learners must know the s**hort-term responses to exercise including** Cardiac dynamics: heart rate, stroke volume and cardiac output. Frank- Starling mechanism and venous return, vasomotor control: vascular shunt and venous return.	Learners will be know what happens to the body when we begin to exercise. They will be able to discuss how heart rate and stroke volume changed and are linked to cardiac output. They will also be able to discuss how venous return and the Frank-Starling mechanism affects cardiac output
Learners must know how the respiratory system responds to different exercise intensities and changes that occur to neuro-muscular system.	Learners will know how breathing rate and tidal volume alters during different forms of exercise. They will be able to discuss how the muscles adapt, and how the nervous system develops through training.
Learners should be able to Interpret data and graphs showing short-term responses within musculo-skeletal, cardio-respiratory and neuro-muscular systems during different types of physical activity.	Learners will be able to create and analyse data shown in graphs and then critically discuss the results drawing upon their knowledge to explain the results and also suggest changes that would be seen under changed circumstances.
Learners must know the l**ong-term adaptations to exercise** Musculo-skeletal system: changes to bone density, articular cartilage and ligaments, muscular hypertrophy, changes to fibre types, thickening of tendons and increased force of muscular contractions.	Learners will understand the changes that occur within the body systems through sustained training and also be able to discuss the suitable methods and intensities needed to reach long term goals / adaptations desired.

Cardio-respiratory system: bradycardia, cardiac hypertrophy and stroke volume (ejection fraction), changes in lung volumes, pulmonary diffusion and the effects on VO_2 max.	
Learners must know about **Preparation and training methods including:** Field-based fitness testing, principles of maximal and sub-maximal tests and laboratory and field-based testing.	Learners will know the principles of training and various methods that can be used within sport. They will understand the need for pre /during / post testing in order to maximise results and be able to discuss the range of tests used and select appropriately based on level of athlete, cost, time and suitability.
Learners must know the components of fitness both health and skill related. Learners must know the methods of training: weight, continuous, fartlek, interval including high intensity training (HIT), plyometrics, circuit and mobility/flexibility.	Learners will be able to discuss cardiovascular endurance, muscular endurance, muscular strength, flexibility and body types. They will be able to discuss suitable methods to train each of these areas and tests to track progress. Learners will be able to define skill components of agility, balance, coordination, speed, power and reaction time. They will be able to select suitable ways in which these can be developed and tests to track this.
Learners must know the principles of training: specificity, progressive overload, reversibility and variance and the importance of monitoring intensity of training. They will understand environmental variances and periodisation, the use of macro, meso and microcycles and the structure of the training year.	Learners will be able to define the underlying principles of training and discuss how these impact on a successful / not successful training schedule. They will be able to discuss the changes to a programme throughout an athletes year as they build towards competition.

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Learners must know how energy systems are used and their application to training principles. They must understand the role of adenosine triphosphate (ATP) and how it is restored through the use of creatine phosphate (ATP-PC system), anaerobic glycolysis (lactic acid system) and aerobic glycolysis.	Learners will be able to discuss how each of the systems provides the energy for differing levels of exercise intensity and how ATP depletion leads to a drop in performance and how it is resynthesized. They will be able to discuss the energy continuum and how each of the systems become dominant depending upon the exercise intensity and how a knowledge of this can impact planning for training.
Learners must know causes of fatigue and its effect on physical activity and sporting performance. This includes the onset of blood lactate accumulation (OBLA) and delayed onset of muscle soreness (DOMS) and excess post-exercise oxygen consumption (EPOC).	Learners will be able to link energy systems, intensity, ATP depletion with onset of fatigue and be able to discuss how ATP depletion leads to a reduction in performance and fatigue.
Learners must know the factors that can potentially speed up the recovery processes such as active cool down, ice baths, compression clothing, nutrition and supplementation and massage.	Learners will be able to critically discuss the benefits of athletes using a variety of recovery methods in order to speed up recovery and prepare for their next physical challenge.

Learners must know what constitutes a balanced diet, relative proportions of carbohydrate, fat and protein. They must understand Kilo joules/calorific intake and energy balance for health and performance purposes. They must be able to link diet to a variety of athletes.	Learners will be able to describe the basic function of each of the components of a balanced diet. They will be able to describe how differing athletes diets vary and also how these may alter in the build up to competition. They will be able to discuss the importance of hydration and effects of dehydration on performance. They will be able to discuss commonly used supplements taken to aid training and potential problems.
Learners must know about **Injury prevention and the rehabilitation**	Learners can discuss the various forms of injury and how to rehabilitate from these. They can also highlight predictors to injury and how an athlete may take steps to minimise the risks

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Knowledge	**Skill**

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Learners must know about the classification of joints: fibrous, cartilaginous and synovial and the types of joints: hinge, pivot, ball and socket, gliding and ellipsoid. They will need to know the structure and function of the musculo-skeletal system.	Learners will be able to use movement terminology and discuss how a variety of joints aid the efficiency or lack of in a variety of sporting situations. They will be able to combine knowledge of the skeletal and muscular system to describe movement patterns. They will be able to discuss fast and slow twitch fibres and how training will affect these.
Learners must know Planes and axes, Movement patterns and use these to describe observed movements	Learners will be able to discuss athletes movement using a knowledge of planes and axes alongside movement terminology (flexion, extension, abduction, adduction for example) when describing observed movements.
Learners must know **Biomechanical principles including:** Newton's three laws of motion, momentum, stability, levers and mechanical advantage	Learners will be able to discuss how newtons laws are used within sport and how the body uses levers to gain sporting mechanical advantage both in our bodies and with external equipment.

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Learners must know how Gravity and weight affect the flight of an object - velocity, height of release and air resistance. They must understand how Magnus effect, Bernoulli principle, pressure differentials impact objects	Learners will be able to discuss linear and angular momentum and how objects are effected by manipulation such as spin or friction within sporting contexts.
Learners must know how fluid friction plays an important role within sport.	Learners will understand how objects passing through fluid are affected and how streamlining within sport has enabled significant developments in this field.
Performance analysis The coaching process and its limitations: the need for performance analysis technology. Qualitative and quantitative approaches to analysing performance: choosing the correct method and analysing data. Video analysis: its advantages, disadvantages and uses. Notational analysis: its advantages, disadvantages and uses. Performance analysis in the media.	Learners will be able to describe the tools used by a coach to analyse performance and drive forward improvements Learners will be able to discuss how technology has benefitted various parties and limitations / inequalities.

Map

Technology Technology for the performer. Technology for the officials. Technology for spectators	

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Personality Personality theories: trait, interactionist and social learning theories. Personality types: extrovert, introvert, stable and neurotic, Type A and Type B. Personality profiling: observation, questionnaires, interviews, profile of mood states (POMS).	Learners will be able to discuss the differing types of personality and how these impact within sporting environments
Attitudes Attitudes, inconsistencies and prejudices in sporting situations. The components of attitudes: triadic model (cognitive, affective and behavioural). Attitude change.	Learners will be able to discuss the triadic model and relate different attitudes to sporting contexts.
Goal setting Reasons for setting goals. Types of goals: performance, outcome and process orientated. Long, medium and short-term goals. Characteristics of goal setting - SMART approach (specific, measurable, agreed, realistic, time-phased).	Learners will be able to discuss the benefits of goal setting in sport. They will be able to link this to periodization for athletes working towards a specific tournament

Map

Stress, arousal and anxiety Definition of stress, arousal and anxiety. Theories of arousal: drive theory, inverted-U and catastrophe theories. Zone of optimal functioning (ZOF) and peak flow experiences. Measurement of stress, arousal and anxiety.	Learners will be able to discuss the three different theories relating to arousal and how these impact performance within sport.
Methods of controlling stress, arousal and anxiety. Different types of anxiety.	
Motivation Intrinsic and extrinsic motivation: the use of tangible and intangible rewards. Achievement motivation and links with personality and situation. Competitiveness: sport-specific achievement motivation and its links with competitive trait anxiety.	Learners will be able to explain the difference between intrinsic and extrinsic motivation and how this drives performances. They will be able to relate to how a knowledge of this can benefit a coach

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Aggression Definitions and types of aggression: hostile and instrumental aggression and assertive behaviour. Theories of aggression: instinct theory and catharsis, frustration-aggression hypothesis, cue arousal and social learning theory. Causes of aggression. Managing and controlling aggression.	Learners will be able to discuss how aggression can be good or bad within sport. They will be able to discuss controlling strategies and link to deviance and gamesmanship within sport.
Social facilitation Positive and negative effects of the presence of an audience on performance. Theories of social facilitation: drive theory, evaluation apprehension theory, distraction conflict theory, self-presentation theory. Home field advantage.	Learners will be able to explain the potential impact of an audience upon performers and how external factors can lead to a reduction in performance.
Group dynamics and leadership The 6 Is (interaction, interdependence, interpersonal relationships, identical norms/goals/values, identity and independence). Formation of groups/teams: forming, storming, norming and performing. Theories of group cohesion: task and social cohesion, group cohesion and group productivity.	Learners will be able to explain the differing traits of leaders and how this helps with group dynamics and success for teams. Learners will be able to explain how poor leadership can lead to a negative response from performers. Learners will be able to discuss the styles of autocratic, democratic and laissez-faire and how this impacts on team outcomes.

Map

Problems with group processes: coordination and motivational loses. Issues relating to group size: the Ringlemann effect and social loafing. Theories of leadership: Great man theory, Fiedler's contingency theory, prescribed and emergent leaders. Leadership styles: autocratic, democratic, laissez-faire. Chelladurali's multi-dimension model of leadship. Leadership scale for sport (LSS).	
Attribution theory Attribution theory: internal/external and stable/unstable reasons given for outcomes. Errors in attribution: self-serving bias, the actor-observer effect and gender differences. Learned helplessness and its effect on performance in sport and disaffection with sport in young people.	Learners will be able to explain how performers attribute performance to factors both internal and external.

Self-efficacy and confidence Self-efficacy and self-confidence. Definitions and sources of self-efficacy. Relationship between self-efficacy and performance.	

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Skill, ability and application to practical activity Definitions of skill, ability, learning and performance. Characteristics of skilled performance. Abilities: gross motor and psychomotor. Skill continuums: pacing, difficulty, organisation, continuity, muscular involvement and environmental influence.	Learners will be able to explain skilful performance and how learners learn. They will be able to link this to coaching and discuss how a knowledge of skill acquisition can help a coach optimise performances.
Learning processes and variables Learning/performance curves: positive, negative, linear and plateau. Theories of Learning: Bandura's observational learning – demonstration, attention, retention, motor reproduction, motivation, matching performance (DARMMM). Reinforcement: positive, negative and punishment; drive reduction theory. Stages of learning (Fitts and Posner): cognitive, associative and autonomous. Transfer of learning: positive/negative, proactive/retroactive, bilateral. Methods of practice: whole/part/progressive part, variable/fixed, massed/distributed, mental rehearsal and practice.	Learners will be able to explain Bandura's theory on how performers learn. They will be able to discuss the stages of learning and how this fits into the performance pyramid working towards elite autonomous performance. Learners will be able to explain how coaches use a variety of methods to help performers learn and give sporting examples to reinforce their knowledge.

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Methods of guidance: visual, verbal, manual and mechanical.	
Models of information processing: Welford's and Whiting's models. Sensory input, perception, decision making, memory, output and feedback. Memory processes: the role of the short-term memory store, short-term memory, long-term memory and selective attention. Reaction time, movement time, response time and the psychological refractory period. Motor programmes and sub routines. Types of Feedback: intrinsic, extrinsic, knowledge of results, knowledge of performance.	Learners will be able to discuss how performers process information and how the brain selects responses based upon inputs. They will be able to link this to types of feedback given to a performer and how autonomy for elite athletes works.

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Sport, culture and society Definitions of culture, society and social institution. The role of sport within society. Sport as a means of social control; as a social institution, as a mechanism of socialisation and as a form of national identity.	Learners will be able to define culture, society and social institution and how this affects sports undertaken and their credence.
Emergence of modern sport The role of the 19th century English public school and university system (three stages of development) in the codification and rationalisation of modern sport. The movement from amateurism to professionalism to commercialisation of modern sport. Amateurism and Olympism. Issues of shamateurism. Use of sport as a political tool. Boycotts, protests, diplomacy and promotion of national identity.	Learners will be able to discuss and compare how sport has changed over time and also between different countries. Learners will be able to give examples of how sport has been used as a tool for good to promote equality and national pride.
Ethics and deviance Sporting ethics: fair play, sportsmanship and gamesmanship. Deviance in sport: notion of behaviour that is at a tangent to the norm. Relative and absolute deviance.	Learners will be able to discuss how sport leads to deviance in some athletes and how 'cheating' on some levels is considered acceptable. Learners will be able to discuss the use of drugs within sport both legal and illegal and how governing bodies are addressing this.

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Types of deviance within sport: under conformity, over conformity and Coakley's sports ethic. Doping within sport: the use, and reasons for the use, of illegal performance enhancing drugs and other illegal methods. Combating the use of performance- enhancing drugs in sport.	
Social differentiation Definition of social stratification and its application to sport. Prejudice, stereotyping and discrimination towards ethnic minorities, women, disabled and socially deprived. Barriers to participation: issues of opportunity, provision and esteem for all disadvantaged groups. Economic and socio cultural factors and their impact on sporting participation and achievement for disadvantaged groups. Strategies for improving participation among disadvantaged groups.	Learners will be able to discuss how differing cultures have stereotypes for certain sports. They will be able to use historical and anatomical evidence to explain these stereotypes. They will be able discuss barriers for participation based on age, sex, ethnicity, cost and link to how society and governing bodies are attempting to address this.
Sport and the mass media Functions of the media in society: inform, interpret, educate, entertain and advertise. Forms of media within sport. The symbiotic relationship between sport and the mass media, the importance of the 'golden triangle'.	Learners will be able to explain how media impacts within sport both good and bad. They will be able to link media, sponsorship and sport within the golden triangle.

Sport as an avenue for perpetuating stereotypes.	
Sport, commercialisation and globalisation Notion of sport as a commodity. Consumerism – market forces/sport industry influences. Americanization and its impact on sport.	Learners will be able to discuss how sport is now global and can be watched anywhere in the world. They will be able to explain and justify the positive and negatives relating to this globalisation and commercialisation.
Globalisation (Giddens). Sport and global culture. Three levels of globalisation: creation of global sporting competitions, the development of satellite communications and growth of the sporting goods market (Cashmore). Globalisation as a mechanism of financial gain. Consequences of globalisation – global migration of players, coaches and expertise; creation and celebrity nature of global superstars and teams.	

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From mass participation to excellence Mass participation v excellence. The sports development pyramid and Sport England's sports development continuum. Participation in sport. Overview of competitive sport at grass roots level through to elite level and how the nature of the competition changes as individuals move towards elite level. Talent identification processes and development initiatives. Methods of identifying talent. The structure of the World Class Performance Pathway. The organisation structures and network of sport within the United Kingdom: national and local provision. Recreational pathways: lifelong involvement, local and national government initiatives, involvement of health agencies.	Learners will be able to discuss the merits behind sport for all and elitism. They will be able to use examples from countries to back up their arguments. They will be able to show and understanding of how governing bodies and national agencies such as Sport England strive to promote and develop certain sports. They will be able to make links to commercialisation and national success in the advancement of sport.