THE BARLOW RC HIGH SCHOOL

SERVE · PRAY · ACHIEVE · RESPECT

Rise up, take courage, and do it.

Year 11

Subject:	**GCSE Physical Education**
Exam Board:	**Edexcel**
Papers:	**Paper 1:** Fitness and Body Systems **(36%)** **Paper 2:** Health and Performance **(23%)** **Practical Exam: 3** activities- **1** team, **1** individual, **1** free choice. **(30%)** **PEP:** Personal Exercise Programme **(10%)**

Paper 1

Revision Topics	Revised
Topic 1: Applied anatomy and physiology **Pages 1-14 of CGP Revision Guide.**	
The functions of the skeleton applied to performance in physical activities and sports: protection of vital organs, muscle attachment, joints for movement, platelets, red and white blood cell production, storage of calcium and phosphorus.	
Classification of bones: long (leverage), short (weight bearing), flat (protection, broad surface for muscle attachment), irregular (protection and muscle attachment)	
Structure: cranium, clavicle, scapula, five regions of the vertebral column (cervical, thoracic, lumbar, sacrum, coccyx), ribs, sternum, humerus, radius, ulna, carpals, metacarpals, phalanges (in the hand), pelvis, femur, patella, tibia, fibula, tarsals, metatarsals, phalanges (in the foot).	
Classification of joints: pivot (neck – atlas and axis), hinge (elbow, knee and ankle), ball and socket (hip and shoulder), condyloid (wrist).	
Movement possibilities at joints dependant on joint classification: flexion, extension, adduction, abduction, rotation, circumduction, plantar-flexion, dorsi-flexion and examples of physical activity and that utilise these movements.	
The role of ligaments and tendons: their relevance to participation in physical activity and sport.	
Classification and characteristics of muscle types: voluntary muscles of the skeletal system, involuntary muscles in blood vessels, cardiac muscle forming the heart, and their roles when participating in physical activity and sport.	
Location and role of the voluntary muscular system: the specific function of each muscle (deltoid, biceps, triceps, pectoralis major, latissimus dorsi, external obliques, hip flexors, gluteus maximus, quadriceps, hamstrings, gastrocnemius and tibialis anterior)	
Antagonistic pairs of muscles: (agonist and antagonist) to create movement at joints to allow physical activities (e.g., gastrocnemius and tibialis anterior acting at the ankle -plantar flexion to dorsi flexion; and quadriceps and hamstrings acting at the knee, biceps and triceps acting at the elbow, and hip flexors and gluteus maximus acting at the hip – all flexion to extension)	
Characteristics of fast and slow twitch muscle fibre types: (type I, type IIa and type IIx) and how these impact on their use in physical activities.	

Functions of the cardiovascular system: transport of oxygen, carbon dioxide and nutrients, clotting of open wounds, regulation of body temperature.	
Structure of the cardiovascular system: atria, ventricles, septum, tricuspid, bicuspid and semi-lunar valves, aorta, vena cava, pulmonary artery, pulmonary vein, and their role in maintaining blood circulation during performance in physical activity.	
Structure of arteries, capillaries and veins: importance during physical activity and sport in terms of blood pressure, oxygenated, deoxygenated blood and changes due to physical exercise.	
Vasoconstriction, vasodilation: the need for redistribution of blood flow (vascular shunting) during physical activities compared to when resting.	
Function and importance: of red and white blood cells, platelets and plasma for physical activity and sport.	
Composition of inhaled and exhaled air: the impact of physical activity and sport on this composition.	
Vital capacity and tidal volume: the change in tidal volume due to physical activity and sport, and the reasons that make the change in tidal volume necessary	
Location of main components of respiratory system: (lungs, bronchi, bronchioles, alveoli, diaphragm) and their role in movement of oxygen and carbon dioxide into and out of the body.	
Structure of alveoli: to enable gas exchange and the process of gas exchange to meet the demands of varying intensities of exercise (aerobic and anaerobic)	
Energy: the use of glucose and oxygen to release energy aerobically with the production of carbon dioxide and water, the impact of insufficient oxygen on energy release, the by-product of anaerobic respiration (lactic acid)	
Energy sources: fats as a fuel source for aerobic activity, carbohydrates as a fuel source for aerobic and anaerobic activity	
Short-term effects of physical activity and sport: on lactate accumulation, muscle fatigue, and the relevance of this to the player/performer.	
Short-term effects of physical activity and sport: on heart rate, stroke volume and cardiac output, and the importance of this to the player/performer.	
Short-term effects of physical activity and sport: on depth and rate of breathing, and the importance of this to the player/performer.	
How the respiratory and cardiovascular systems work together: to allow participation in, and recovery from, physical activity and sport: oxygen intake into lungs, transfer to blood and transport to muscles, and removal of carbon dioxide	

Revision Topics	**Revised**
Paper 1 Topic 3: Physical Training **Pages 18-35 of CGP Revision Guide.**	
Definitions: fitness, health, exercise and performance and relationship between them	
Components of fitness and their importance in physical activity and sport: cardiovascular fitness, strength, muscular endurance, flexibility, body composition, agility, balance, coordination, power, reaction time, and speed	
Fitness tests: the purpose of specific fitness tests, the test protocols, the selection of the appropriate fitness test for components of fitness.	
Fitness tests for specific components of fitness: cardiovascular fitness – Cooper 12-minute tests (run, swim), Harvard Step Test; agility – Illinois agility run test; strength – grip dynamometer; muscular endurance – one minute sit-up, one-minute press-up; speed – 30 m sprint; power – vertical jump; flexibility – sit and reach	

Planning training using the principles of training: individual needs, specificity, progressive overload, FITT (frequency, intensity, time, type), overtraining, reversibility,	
Thresholds of training: aerobic target zone: 60–80% and anaerobic target zone: 80%–90% calculated using simplified Karvonen formula, (220) – (your age) = Max Heart Rate. (MaxHR) x (60% to 80%) = aerobic training zone (MaxHR) x (80% to 90%) = anaerobic training zone.	
Training methods for specific components of fitness: continuous, Fartlek, circuit, interval, plyometrics, weight/resistance.	
Long-term effects and the benefits: to the muscular-skeletal and cardio-respiratory systems and performance. **Long-term training effects and benefits:** for performance of the muscular-skeletal system: increased bone density, increased strength of ligaments and tendons, muscle hypertrophy, the importance of rest for adaptations to take place, and time to recover before the next training session.	
Long-term training effects and benefits: for performance of the cardio-respiratory system: decreased resting heart rate, faster recovery, increased resting stroke volume and maximum cardiac output, increased size/strength of heart, increased capillarisation, increase in number of red blood cells, drop in resting blood pressure due to more elastic muscular wall of veins and arteries, increased lung capacity/volume and vital capacity, increased number of alveoli, increased strength of diaphragm and external intercostal muscles.	
The use of a PARQ: to assess personal readiness for training and recommendations for amendment to training based on PARQ.	
Injury prevention through: correct application of the principles of training to avoid overuse injuries; correct application and adherence to the rules of an activity during play/participation; use of appropriate protective clothing and equipment; checking of equipment and facilities before use, all as applied to a range of physical activities and sports.	
Injuries that can occur in physical activity and sport: concussion, fractures, dislocation, sprain, torn cartilage and soft tissue injury (strain, tennis/golfers' elbow, abrasions).	
RICE (rest, ice, compression, elevation)	
Performance-enhancing drugs (PEDs) and their positive and negative effects on the performer: lifestyle, including anabolic steroids, beta blockers, diuretics, narcotic analgesics, peptide hormones (erythropoietin (EPO), growth hormones (GH)), stimulants, blood doping.	
The purpose and importance of warm-ups and cool downs. **Phases of a warm-up and their significance in preparation for physical activity and sport:** activities included in warm-ups and cool downs.	

Paper 2

Revision Topics	Revised
Topic 1: Health, fitness and well being **Pages 36-44 of CGP Revision Guide.**	
Physical health: how increasing physical ability, through fitness can improve health and reduce health risks.	
Emotional health: how participation in physical activity and sport can improve emotional/psychological health.	
Social health: how participation in physical activity and sport can improve social health	
Lifestyle choices: diet, activity level, work/ rest/sleep balance, and recreational drugs (alcohol, nicotine)	

Positive and negative impact of lifestyle choices on health, fitness and wellbeing: e.g. the negative effects of smoking (bronchitis, lung cancer)	
A sedentary lifestyle and its consequences: overweight, overfat, obese, increased risk of depression, coronary heart disease, high blood pressure, diabetes, osteoporosis, loss of muscle tone, posture.	
The nutritional requirements and ratio of nutrients for a balanced diet: to maintain a healthy lifestyle: carbohydrates 60%, proteins 20%, fats 30%	
The role and importance of macronutrients (carbohydrates, proteins and fats): for performers in physical activities and sports: carbohydrate loading for endurance athletes, and timing of protein intake for power athletes	
The role and importance of micronutrients (vitamins and minerals), water and fibre: for performers/players in physical activities and sports	
The factors affecting optimum weight: sex, height, bone structure and muscle girth. The variation in optimum weight according to roles in specific physical.	
The correct energy balance: to maintain a healthy weight	
Hydration for physical activity and sport: why it is important, and how correct levels can be maintained during physical activity and sport	

Revision Topics	Revised
Topic 2: Sports Psychology **Pages 45-48 of CGP Revision Guide.**	
Classification of a range of sports skills: open-closed, basic (simple)-complex, and low organisation-high organisation continua.	
Practice structures: massed, distributed, fixed and variable	
The use of goal setting to improve and/or optimise performance: setting and reviewing targets to improve and/or optimise performance	
Principles of SMART targets: (specific, measurable, achievable, realistic, time-bound) and the value of each principle in improving and/or optimising performance	
Types of guidance to optimise performance: visual, verbal, manual and mechanical Advantages and disadvantages of each type of guidance and its appropriateness when used with performers of different skill levels.	
Types of feedback to optimise performance: intrinsic, extrinsic, concurrent, terminal.	
Mental preparation for performance: warm up, mental rehearsal.	