West Kirby Grammar School

Curriculum Map – Year 12 – PE (2022-23)
Physiology

Topic name	Term	Skills developed	Prior learning	Next link in curriculum
Joints, movements and muscles	Autumn	• Knowledge of the shoulder, elbow, wrist, hip, knee and ankle joints – including type of joint, articulating bones, controlling muscles and movements. • Planes of movement – frontal, transverse, sagittal. • Types of contraction • Functional roles of muscles. • Analysis of movement. • Skeletal muscle contraction • Muscle contraction during exercise of differing intensities and during recovery	Extension from work covered in OCR GCSE theory. • Cross-curricular links – biology.	• Tracker test, End of year examination. • Used in the EAPI assessment. • Links ATP and Energy Systems covered in Year 13.
Cardiovascular system at rest Cardiovascular system during exercise of differing intensities and during recovery	Autumn	• The relationship between and resting values for heart rate, stroke volume and cardiac output. • The cardiac cycle – diastole and systole. • The conduction system of the heart linked to the cardiac cycle. • The effects of exercise and recovery on heart rate, stroke volume and cardiac output. • Redistribution of cardiac output during differing intensities of exercise and during recovery (vascular shunt mechanism) • Mechanisms of venous return. • Regulation of heart rate during exercise.	Extension from work covered in OCR GCSE theory. • Cross-curricular links – biology, mathematics.	• Tracker test, End of year examination. • Used in the EAPI assessment. • Calculations • Links to Environmental Factors covered in Year 13.
Respiratory system at rest Respiratory system during exercise of differing intensities and during recovery	Autumn	• Relationship between resting values – breathing frequency, tidal volume, minute ventilation. • Mechanics of breathing at rest. • Effects of differing intensities of exercise and recovery on breathing frequency, tidal volume and minute ventilation. • Mechanics of breathing during differing intensities of exercise. • Regulation of breathing during exercise of different intensities and during recovery- neural and chemical control • Gaseous exchange – effects of differing intensities of exercise and recovery.	Extension from work covered in OCR GCSE theory. • Cross-curricular links – biology, mathematics.	• Tracker test, End of year examination. • Used in the EAPI assessment. • Calculations • Links to Environmental Factors covered in Year 13.

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Diet and nutrition	Spring	• The function and importance of the components of a healthy, balances diet. • Energy intake and expenditure and energy balance in physical activity and performance.	Extension from work covered in OCR GCSE theory. • Cross-curricular links – biology, mathematics, food technology, health and social care.	• Tracker test, End of year examination. • Used in the EAPI assessment. • Calculations
Ergogenic Aids	Spring	• Use of ergogenic aids, potential benefits and risks.	• Some of the ergogenic aids are covered very briefly in the GCSE PE syllabus	• Tracker test, End of year examination.
Aerobic training	Spring	• Definitions of aerobic capacity and maximal oxygen uptake. • Factors (e.g. gender) affecting VO_2 max. • Methods of evaluating aerobic capacity. • Training to develop aerobic capacity. • Use of target heart rates as an intensity guide. • Physiological adaptations from aerobic training. • Activities and sports in which aerobic capacity is a key fitness component.	• Extension from work covered in OCR GCSE theory.	• Tracker test, End of year examination. • Used in the EAPI assessment. • Calculations
Strength training	Spring	• Types of strength (e.g. strength endurance). • Factors (e.g .fibre type) affecting strength. • Methods of evaluating strength. • Training to develop strength. • Physiological adaptations from strength training. • Activities and sports in which strength is a key fitness component.	• Extension from work covered in OCR GCSE theory.	• Tracker test, End of year examination. • Used in the EAPI assessment.
Flexibility training	Spring	• Types of flexibility (e.g. static). • Factors (e.g .fibre type) affecting flexibility. • Methods of evaluating flexibility. • Training to develop flexibility. • Physiological adaptations from flexibility training. • Activities and sports in which flexibility is a key fitness component.	• Extension from work covered in OCR GCSE theory.	• Tracker test, End of year examination. • Used in the EAPI assessment.

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Periodisation of training	Spring	• Periodisation cycles – macrocycle, mesocycle and microcycle. • Phases of training. • Tapering to optimise performance. • Planning a health and fitness programme for aerobic, strength and flexibility training.	• This is a new topic for students. Some students may have some knowledge of this topic from their own training.	• Tracker test, End of year examination. • Used in the EAPI assessment.
Impact of training on lifestyle diseases	Summer	• The effects of training on lifestyle diseases – CHD, stroke, atherosclerosis, heart attack, asthma and COPD	Cross-curricular links – biology, health and social care.	• Tracker test, End of year examination. • Used in the EAPI assessment.
Biomechanics	Summer	• Define and apply Newton's laws of motion. • Forces • Levers • Analysing movement through the use of technology.	Cross-curricular links – physics, mathematics. • Levers/planes of movement are covered in the GCSE PE syllabus	• Tracker test, End of year examination. • Used in the EAPI assessment. • Links to Biomechanics covered in Year 13.