IMBERHORNE SCHOOL

Curriculum Map
Physical Education KS5 Sports Science

Our Vision:

The qualification gives learners the knowledge, understanding and skills that underpin the sport and exercise science sector to prepare them for further study or training at a higher level. Students undertaking the double award (diploma) will study 8 units across the two years of which 3 are externally examined and 5 are portfolio units, and those opting for a single award (Foundation Diploma) will study 4 units across the two years, 2 of which are externally examined and two are portfolio units.

Year Group	**Subject Skills** *Students will be able to use these skills and techniques:*	**Subject Knowledge** *Students will develop subject knowledge about…*	**Qualities Enhanced** *Through the study of PE, students will enhance their skills in…*
12 Overview	Basic Techniques: Note making Revision techniques Exam question technique Gathering data Interpreting data Presenting data Making presentations Designing leaflets Carrying out field-based testing	Understanding of: Unit 1 – Sport and Exercise Physiology (Exam – only completed by double award students) Unit 2 – Functional Anatomy (Exam) Unit 3 – Applied Sport and Exercise Psychology (Exam) Unit 5 - Applied research methods in sport and exercise science Field and laboratory-based fitness testing (Portfolio – only completed by double award students)	• Communication • Team Work/Collaboration • Reading • Resilience • Empathy • Critical thinking

IMBERHORNE SCHOOL

13 Overview	<u>Basic Techniques</u>: Note making Revision techniques Gathering data Interpreting data Presenting data Making presentations Designing leaflets Carrying out field-based testing	<u>Understanding of:</u> Unit 4 – Field and Laboratory-based Fitness Testing (Portfolio – only completed by double award students) Unit 6 – Coaching for Performance and Fitness (Portfolio) Unit 7 – Biomechanics in Sport and Exercise Science (Portfolio) Unit 12 – Sociocultural Issues in Sport and Exercise (Portfolio – only completed by double award students)	• Communication • Team Work/Collaboration • Reading • Resilience • Empathy • Critical thinking
12	<u>Unit 1: Sport and Exercise Physiology</u> **AO1 Demonstrate knowledge and understanding of body systems and how they respond and adapt to exercise in different environments** Command words: describe, explain, give, identify, name, state Marks: range from 1 to 4 marks **AO2 Apply knowledge and understanding of body systems and how they respond and adapt to exercise in different environments in context** Command words: describe, explain Marks: range from 1 to 4 marks **AO3 Analyse sports performance data to interpret the body's responses and adaptations to exercise and evaluate their impact on sport and exercise performance**	**A Responses of the body systems to a single sport or exercise session** Understand anaerobic and aerobic energy production for sport and exercise A1 Skeletal system A2 Muscular system A3 Respiratory system A4 Cardiovascular system A5 Nervous system A6 Endocrine system A7 Energy systems **B Fatigue and how the body recovers from exercise** Understand the causes, effects and recovery from fatigue for each body system. B1 Causes of fatigue B2 Recovery of energy systems B3 Recovery of musculoskeletal system B4 Overtraining	• Communication • Team Work/Collaboration • Reading • Resilience • Empathy • Critical thinking

	Command words: analyse, assess, discuss, evaluate Marks: 8 marks **AO4 Make connections between how the body systems work together in response to the demands of sport and exercise and to enhance performance** Command words: analyse, assess, discuss, evaluate, to what extent Marks: 8 marks	**C Adaptations of the body systems to exercise** Understand how adaptation to training and interrelationship of body systems improve sport and exercise performance. C1 Skeletal system C2 Muscular system C3 Respiratory system C4 Cardiovascular system C5 Nervous system C6 Endocrine system C7 Energy systems C8 Measurement of body systems and their contribution to sport and exercise performance **D Environmental factors and sport and exercise performance** Understand the responses and adaptations of the body systems to differing environmental factors during sport and exercise performance. D1 High altitude D2 Responses of body systems to high altitude D3 Adaptations of the body systems to high altitude D4 Thermoregulation D5 Excessive heat D6 Extreme cold	
12	<u>Unit 2: Functional Anatomy</u> **AO1 Demonstrate knowledge and understanding of the language, structure, characteristics and function of each anatomical system**	**A Anatomical positions, terms and references** A1 Anatomical language **B Anatomy of the cardiovascular system** B1 Location, anatomy and function of cardiovascular components B2 Function of the cardiovascular system	• Communication • Team Work/Collaboration • Reading • Resilience • Empathy • Critical thinking

	Command words: describe, give, identify, name, state Marks: range from 1 to 4 marks **AO2 Apply knowledge and understanding of the structure, characteristics and function of the anatomical systems in context** Command words: describe, explain Marks: range from 2 to 4 marks **AO3 Analyse the anatomical systems' effectiveness in producing sport and exercise movements and evaluate their impact on performing movements successfully** Command words: analyse, assess, evaluate, discuss, to what extent Marks: range from 8 to 14 marks **AO4 Make connections between anatomical systems and how they interrelate in order to carry out different exercise and sporting movements in context** Command words: analyse, assess, evaluate, discuss, to what extent Marks: range from 8 to 14 marks	B3 Cardiac cycle **C Anatomy of the respiratory system** C1 Location, anatomy and function of respiratory system components C2 Function of the respiratory system C3 Control of breathing **D Anatomy of the skeletal system** D1 Anatomy of the bone D2 Process of bone growth and remodelling D3 Location of skeletal bones D4 Ligaments D5 Joints D6 Function of skeletal system **E Anatomy of the muscular system** E1 Muscle types E2 Neuromuscular process of muscle contraction E3 Location of skeletal muscles E4 Antagonistic muscle pairs E5 Types of movement E6 Planes of movement **F Analysis of the skeletal and muscular systems and how they produce movements in sport and exercise** F1 Phases of sport and exercise movement F2 Interrelationship of the muscular and skeletal systems in movement analysis	
12	<u>Unit 3: Applied Sport and Exercise Psychology</u> **AO1** Demonstrate knowledge and understanding of psychological factors,	**A Motivation for sports and exercise** A1 Types of motivation A2 Theories of motivation	• Communication • Team Work/Collaboration • Reading • Resilience

	concepts, interventions and theories in sport and exercise activities **AO2** Apply knowledge and understanding of psychological factors, concepts, interventions and theories, and their influence in sport and exercise activities on real-life sporting contexts **AO3** Analyse and evaluate information related to individuals or teams to determine appropriate psychological interventions **AO4** Be able to recommend psychological interventions underpinned by theory and in context with appropriate justification **The number of marks for the task is 60**	A3 Motivational environment and its influence on sports performers A4 Signs and effects of over-motivation **B Competitive pressure in sport** B1 Theories of arousal-performance relationship B2 Stress and anxiety on sports performance B3 Consequences of stress and anxiety B4 Aggression as a response to competitive pressure **C Effects of self-confidence, self-efficacy and self-esteem on sport and exercise performance** C1 Self-confidence and sport and exercise performance C2 Self-efficacy in sport and exercise performance C3 Self-esteem and its impact on sport and exercise performance **D Mindset in sport and exercise performance** D1 Growth mindset versus fixed mindset D2 Resilience in sport D3 Perfectionism **E Group dynamics in sport** E1 Group processes E2 Cohesion E3 Leadership **F Psychological interventions for sports performance and exercise** F1 Aims of psychological interventions F2 Performance profiling F3 Goal setting F4 Imagery in sport and exercise	• Empathy • Critical thinking

		F5 Self-talk in sports and exercise F6 Arousal control techniques in sport and exercise	
12	<u>Unit 5: Applied research methods in sport and exercise science</u> **A01**: Understanding the importance of research in sporting environments **A02**: Examine the key issues that impact on the effectiveness and quality of research in the sport and exercise sciences **A03**: Examine the 3 main approaches to research in sport and exercise sciences **A04**: Apply appropriate research methods to a selected sport and exercise science-based research problem	A: understand the different types of research and the importance of research for individuals involved in sport and exercise science **A: Understand the importance of research in sporting environments** A1 Introduction to research and the different types of research A2 The importance of research for individuals involved in sport and exercise science A3 The importance of using research to inform work with clients **B: Examine key issues that impact on the effectiveness and quality of research in the sport and exercise sciences** B1 Validity, reliability, accuracy and precision in research B2 Ethical issues Learning aim C: Examine the three main approaches to research in the sport and exercise sciences Throughout this learning aim, learners should use the different research methods in practical settings in order to develop their practical skills in using the methods, as opposed to simply understanding when to use them. C1 Quantitative research C2 Qualitative research C3 Mixed-methods research	• Communication • Team Work/Collaboration • Reading • Resilience • Critical thinking

		D: Apply appropriate research methods to a selected sport and exercise sciences-based research problem D1 Quantitative research designs D2 Quantitative data collection methods D3 Quantitative data analysis methods D4 Qualitative research designs D5 Qualitative data collection methods D6 Qualitative data analysis methods D7 Mixed-research designs D8 Mixed-research data collection D9 Mixed-research data analysis	
13	<u>Unit 4: Field and laboratory-based fitness testing</u> A01: examining the preparation required prior to sport and exercise field and laboratory-based testing A02: undertaking anthropometric and somatotype testing procedures in sport A03: exploring the use of field-based protocols in sport and exercise sciences A04: exploring profiling of sports performers	A: understanding the health and safety requirements in a sport and exercise laboratory. **A: Examine the preparation required prior to sport and exercise field- and laboratory-based testing** A1 Health and safety in a sport and exercise laboratory A2 Ethical considerations when conducting sport and exercise testing A3 Validity and reliability of testing protocols when conducting sport and exercise assessments **B: Undertake anthropometry and somatotype testing procedures in sport** B1 Anthropometric assessment methods applied within the sport and exercise laboratory B2 Somatotype profiling applied within the sport and exercise laboratory **C: Explore the use of field- and laboratory-based protocols in sport and exercise sciences**	• Communication • Team Work/Collaboration • Reading • Resilience • Critical thinking

		C1 Applied laboratory and experimental testing C2 Experimental data collection methods used within the sport and exercise laboratory C3 Data handling and evaluation of outcomes when conducting laboratory experimentation **D: Explore profiling of a sports performer following a practical research design using field- and laboratory-based testing** D1 Scientific application of experimental protocols in sport and exercise science D2 Performance profiling through research design	
13	<u>UNIT 6: Coaching for Performance and Fitness</u> A01 - Investigate coaching for performance and fitness A02 - Explore practices, adaptations and measures used to develop performance and fitness A03 - Demonstrate effective planning of coaching to develop performance and fitness A04 - Explore the impact of coaching for performance and fitness.	**A: Investigate coaching for performance and fitness** A1 Skills and knowledge for coaching for performance and fitness A2 Qualities for coaching for performance and fitness A3 Best practice for a coach for performance and fitness A4 Methods of supporting the development of performance and fitness A5 Technology and sports professionals **B: Explore practices, adaptations and measures used to develop performance and fitness** Learners can research the characteristics and demands of their chosen sport, as well as practices and adaptations to promote performance and fitness. B1 Practices to develop skills and techniques for performance	• Communication • Team Work/Collaboration • Reading • Resilience • Critical thinking

		B2 Practices to develop tactics for performance B3 Adaptation of practices to promote development of performance and fitness B4 Measures of performance and fitness **C: Demonstrate effective planning of coaching to develop performance and fitness** Learners will understand how to produce effective coaching plans that will be used to improve the physical performance of an individual. C1 Planning considerations C2 Planning for an individual session for performance and fitness C3 Planning for an overall series of sessions for performance and fitness **D: Explore the impact of coaching for performance and fitness** Learners will deliver a planned coaching session and reflect on their success and development needs for the future. D1 Delivering coaching for performance and fitness D2 Reflection on session and planned series D3 Coaching development based on reflection	
13	<u>UNIT 7: Biomechanics in Sport and Exercise Science</u> A01 - Investigate linear motion in sport and exercise activities A02 - Examine forces acting on sports performers and their equipment A03 - Investigate angular motion in sport and exercise activities.	**A: Investigate linear motion in sport and exercise activities** A1 Linear motion A2 Speed and velocity A3 Acceleration and deceleration A4 Inertia and momentum **B: Examine forces acting on sports performers and their equipment**	• Communication • Team Work/Collaboration • Reading • Resilience • Critical thinking

		B1 Newton's three laws of motion B2 Reaction forces B3 Friction B4 Air resistance B5 Aerodynamics B6 Lift and Bernoulli's principle **C: Investigate angular motion in sport and exercise activities** C1 Centre of mass C2 Centre of mass and stability C3 Levers C4 Axes of rotation	
13	<u>Unit 12: Sociocultural Issues in Sport and Exercise</u> A01 - Understand the social theories used to study and interpret sport and exercise in society A02 - Investigate the historical and cultural changes, and the social and ethical issues that have impacted on sport and exercise development in the UK A03 - Investigate the relationships between commercialism, the media, and sport and exercise.	**A: Understand the social theories used to study and interpret sport and exercise in society** Learners must understand the social theories and the impact they may have in sports and exercise contexts A1 Functionalist theory A2 Conflict theory A3 Critical theory A4 Figurational theory **B: Investigate the historical and cultural changes, and the social and ethical issues that have impacted on sport and exercise development in the UK** B1 Historical and cultural changes on sport B2 Social and ethical issues in the UK **C: Investigate the relationships between commercialism, the media, and sport and exercise** Learners must investigate the relationships which	• Communication • Team Work/Collaboration • Reading • Resilience • Critical thinking

		exist in sport and exercise due to the media and commercialism. C1 The use of media to promote sport C2 The impact of media attention on sport and sports figures C3 The impact of media attention on sports performers and spectators C4 Sport and the performer as a commercialised product C5 Globalisation of sport C6 Balance between social issues and the globalisation of sport	