



Physiology (2026-27)

Topic Name	Term	Skills Developed	Next link in curriculum	Other Notes/Links to Prior Learning
Adenosine triphosphate (ATP) and energy transfer	Autumn	- ATP as 'energy currency' - Principle of energetically coupled reactions. - Breakdown of ATP to ADP (Adenosine Diphosphate) + P (phosphate). - Resynthesis of ATP from ADP + P.	- Tracker test, End of year examination. - Used in the EAPI assessment.	Cross-curricular links – biology. Extension of any prior learning from biology. New topics related to sport and exercise physiology
Energy system and ATP resynthesis	Autumn	- Energy systems: - ATP-PC (Phosphocreatine) system - Glycolytic system & Aerobic system. - For each system: type of reaction (aerobic or anaerobic), chemical or food fuel used, specific site of the reaction, controlling enzyme, ATP yield, specific stages.	- Tracker test, End of year examination. - Used in the EAPI assessment.	Cross-curricular links – biology. Extension of any prior learning from biology. New topics related to sport and exercise physiology
ATP resynthesis during exercise of differing intensities and durations	Autumn	- The energy continuum. - Predominant energy system used during exercise. - Interpretation of figures relating to the contribution of the three energy systems to exercise of different intensities and durations.	- Tracker test, End of year examination. - Used in the EAPI assessment.	Cross-curricular links – biology. Extension of any prior learning from biology. New topics related to sport and exercise physiology
Recovery process	Autumn	- How the body returns to its pre-exercise state - Excess Post exercise Oxygen Consumption (EPOC). - Fast components of EPOC, the processes that occur and the duration: replenishment of blood and muscle oxygen stores. - Re-synthesis of ATP and PC.	- Links with ATP and the Energy Systems. - Used in the EAPI assessment. - Tracker test, End of year examination.	Cross-curricular links – biology. Recovery and cool down discussed in practical lessons and in the GCSE PE syllabus



		Slow components of EPOC, the processes that occur and the duration.		
Exercise at altitude	Autumn	- Effect of altitude on the cardiovascular and respiratory systems. - Acclimatisation, including the importance of timing arrival, at altitude (above 2400m).	- Links with the cardiovascular and respiratory systems. - Used in the EAPI assessment. - Tracker test, End of year examination.	Cross-curricular links –Geography. New topic for students
Exercise in the heat	Autumn	- Effect of heat on the cardiovascular and respiratory systems. - Temperature regulation. - Cardiovascular drift.	- Links with the cardiovascular and respiratory systems. - Used in the EAPI assessment. - Tracker test, End of year examination.	New topic for students
Acute and chronic injuries	Spring	- Acute injuries resulting from a sudden stress to the body: hard tissue injuries, soft tissue injuries, concussion. - Chronic injuries resulting from continuous stress to the body: soft tissue injuries, hard tissue injuries.	- Tracker test, End of year examination. - Used in the EAPI assessment.	Extension from work covered in OCR GCSE theory. Some sports injuries covered in GCSE PE theory course
Injury prevention	Spring	- Intrinsic risk factors: individual variables, training effects. - Extrinsic risk factors: poor technique/training, incorrect equipment/clothing, inappropriate intensity, duration or frequency of activity - Debate surrounding effective warm up and cool down.	- Tracker test, End of year examination. - Used in the EAPI assessment.	Extension from work covered in OCR GCSE theory. Some injury prevention covered in GCSE PE theory course



Physiology (2026-27)

Responding to injuries and medical conditions in a sporting context	Spring	- Assessing sporting injuries using 'SALTAPS'. - Acute management of soft tissue injuries using 'PRICE'. - Recognising concussion: IRB's 'Recognise and Remove' 6 R's.	- Tracker test, End of year examination. - Used in the EAPI assessment.	Extension from work covered in OCR GCSE theory.
Rehabilitation of injury	Spring	- Treatment of common sporting injuries: fractures, dislocation, sprain, torn cartilage, exercise-induced muscle damage - Treatments: stretching, massage, cold and contrast therapies, anti-inflammatory drugs, physiotherapy, surgery.	- Tracker test, End of year examination. - Used in the EAPI assessment.	Extension from work covered in OCR GCSE theory.
Linear motion	Spring	- Definition of linear motion. - Creation of linear motion by the application of a direct force through the centre of mass. - Definitions, calculations and units of measurement for each of the following quantities of linear motion: distance displacement speed velocity acceleration/deceleration Plot and interpret graphs of linear motion: distance/time graphs, speed/time graphs, velocity/time graphs.	- Tracker test, End of year examination. - Used in the EAPI assessment. - Links with the biomechanics covered in Year 12.	Cross-curricular links –Physics. Some new topics relating and extending previous knowledge to sport/biomechanics/movement analysis.



Physiology (2026-27)

Angular Motion	Spring	• Definition of angular motion. • Creation of angular motion through the application of an eccentric force about one (or more) of the three axes of rotation. • Definitions, calculations and units of measurement for each quantity of angular motion: moment of inertia, angular velocity, angular momentum. • Factors affecting the size of the moment of inertia of a rotating body. • The relationship between moment of inertia and angular velocity. • The conservation of angular momentum during flight in relation to the angular analogue of Newton's first law of motion. • Interpret graphs of angular velocity, moment of inertia and angular momentum.	• Tracker test, End of year examination. • Used in the EAPI assessment. • Links with the biomechanics covered in Year 12.	Cross-curricular links –Physics. Basic knowledge on types of rotation developed in the GCSE PE syllabus. Prior learning from GCSE Physics syllabus Some new topics for students
Fluid mechanics	Summer	• Factors that impact the magnitude of air resistance (on land) or drag (in water) on a body or object: ➢ Velocity ➢ Mass ➢ Frontal cross-sectional area ➢ Streamlining and shape ➢ Surface characteristics.	• Tracker test, End of year examination. • Used in the EAPI assessment.	Possible prior learning from the GCSE Physics syllabus New topics relating to sport/biomechanics and physical activity/movement.



Physiology (2026-27)

Projectile motion	Summer	• Factors affecting the horizontal distance travelled by a projectile: ➤ Height of release ➤ speed of release ➤ angle of release ➤ free body diagrams showing the forces acting on a projectile once in flight: ➤ weight ➤ air resistance • Resolution of forces acting on a projectile in flight using the parallelogram of forces. • Patterns of flight paths as a consequence of the relative size of air resistance and weight. • Parabolic (symmetrical) flight path – shot put. • Non-parabolic (asymmetric) flight path – badminton shuttle. • The addition of lift to a projectile through the application of Bernoulli's principle: ➤ angle of attack to create an upwards lift force on a projectile: – discus – javelin – ski jumper ➤ design of equipment to create a downwards lift force: F1 racing cars & track cycling. • Use of spin in sport to create a Magnus force, causing deviations to expected flight paths.	• Tracker test, End of year examination. • Used in the EAPI assessment.	Possible prior learning from the GCSE Physics syllabus New topics relating to sport/biomechanics and physical activity/movement. Discussion of spin tennis practical lessons. Discussion of speed and angle of release in throwing events in athletics practical lessons.
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