



## 6<sup>th</sup> Form Transition Pack

QUALIFICATION	A level PE
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Exam board and link	EDUQAS <a href="https://www.eduqas.co.uk/ed/qualifications/physical-education-as-a-level/#tab_overview">https://www.eduqas.co.uk/ed/qualifications/physical-education-as-a-level/#tab_overview</a>
Specification details	<a href="https://www.eduqas.co.uk/media/on5nqjef/wjec-eduqas-as-physical-education-specification.pdf">https://www.eduqas.co.uk/media/on5nqjef/wjec-eduqas-as-physical-education-specification.pdf</a> <a href="https://www.eduqas.co.uk/media/hlroo45y/eduqas_as_physical_education_guidance_for_teaching.pdf">https://www.eduqas.co.uk/media/hlroo45y/eduqas_as_physical_education_guidance_for_teaching.pdf</a> <a href="https://www.eduqas.co.uk/media/q2ohzqma/gce-gft-eduqas-pe.pdf">https://www.eduqas.co.uk/media/q2ohzqma/gce-gft-eduqas-pe.pdf</a>
Recommended online learning	Use this youtuber to learn and make notes on different topics <a href="https://www.youtube.com/channel/UCChU8cYZY5xpQ7pBlku3Xw">https://www.youtube.com/channel/UCChU8cYZY5xpQ7pBlku3Xw</a>
Recommended reading list	Online textbooks for each topic: <a href="https://resources.eduqas.co.uk/Pages/ResourceSingle.aspx?rId=1148">https://resources.eduqas.co.uk/Pages/ResourceSingle.aspx?rId=1148</a>

**Please email Miss Swan on your school account who can then share all resources on the ONEDRIVE with you to access easily.**

This includes PowerPoints, past papers and online textbooks in PDF form.

See below the first topic you study in Year 12. Use the links to watch the videos and make notes. You have studied a lot of the topics at GCSE.



## 1. Exercise physiology, training and performance

Content	Amplification
<p><b>The contribution which physical activity makes to health and fitness</b></p> <p>The importance of exercise. Benefits of an active, healthy lifestyle. The consequences of adopting a sedentary lifestyle.</p>	<p>The social, psychological and physical benefits of exercising. The risk of not having a healthy lifestyle. The risks include increased stress, hypertension, cardiac atrophy and obesity as well as the risk of psychological issues such as having a poor body image and lower self-confidence.</p>

Studied at GCSE.

<p><b>Short-term responses to exercise</b></p> <p>Cardiac dynamics: heart rate, stroke volume and cardiac output. Frank-Starling mechanism and venous return.</p> <p>Cardiac response to exercise: changes in heart rate, stroke volume and cardiac output. The cardiac cycle.</p> <p>Vasomotor control: vascular shunt and venous return.</p>	<p>How the heart works as a dual-action pump (systemic and pulmonary circulation) and of the control and regulation of the heart through the use of the cardiac control centre (CCC) and the sympathetic and parasympathetic nervous systems. Changes to cardiac response should be viewed in relation to exercise intensity and levels of fitness.</p> <p>The structure of blood vessels (arteries, veins and capillaries), blood pressure as a function of cardiac output and resistance to flow.</p>
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Cardiac cycle- <https://www.youtube.com/watch?v=swGV1a3f1G8&t=238s>

CCC- <https://www.youtube.com/watch?v=9PD6ESjqVZg&t=632s>

Venous return- <https://www.youtube.com/watch?v=U13TwV1b5bc&t=1s>

Vascular shunt- studied at GCSE

Structure of blood vessels- [https://www.youtube.com/watch?v=bNLN72Ej\\_5Q&t=2s](https://www.youtube.com/watch?v=bNLN72Ej_5Q&t=2s)

<p>Respiratory response to different exercise intensities.</p> <p>Changes to neuro-muscular system.</p>	<p>The role of chemoreceptors, proprioceptors, thermoreceptors and baroreceptors.</p> <p>Increased speed of transmission as muscle is warmed up. Steady state and <math>VO_2</math> max.</p>
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RCC- <https://www.youtube.com/watch?v=RYb1gUAB098&t=16s>

Changes to muscular system- <https://www.youtube.com/watch?v=ljuYfZCo4EI>



Content	Amplification
<p><b>Long-term adaptations to exercise</b> Musculo-skeletal system: changes to bone density, articular cartilage and ligaments (linked with mobility training), muscular hypertrophy, changes to fibre types, thickening of tendons and increased force of muscular contractions.</p> <p>Cardio-respiratory system: bradycardia, cardiac hypertrophy and stroke volume (ejection fraction), changes in lung volumes, pulmonary diffusion and the effects on <math>VO_2</math> max.</p>	<p>How different methods of training (aerobic and anaerobic) cause long term adaptations to body systems and the physiological changes caused by training and links to improvements in performance. The effects of exercise on myoglobin content, number of capillaries and stores of glycogen.</p> <p><b>Learners should be able to</b> Interpret data and graphs showing long-term adaptations within musculo-skeletal, cardio-respiratory and neuro-muscular systems during different types of physical activity and sport.</p>

Long term effects- studied at GCSE <https://www.youtube.com/watch?v=sqSVdGwkF80>

<p><b>Preparation and training methods</b> Field-based fitness testing.</p> <p>Principles of maximal and sub-maximal tests.</p> <p>Laboratory testing.</p>	<p>Field-based test protocols for the following components of fitness: aerobic capacity (cardiovascular endurance), strength (static and dynamic), muscular endurance, flexibility, agility, balance, speed, power, reaction time and co-ordination.</p> <p>The following laboratory tests and protocols: <math>VO_2</math> max treadmill or cycle ergometer test and the 30 seconds Wingate Power test. Advantage and disadvantage of different ways of testing.</p> <p>How to interpret fitness test results e.g. normative tables, athletes previous test results.</p> <p>Concepts of relevance, validity and reliability.</p> <p>How sport specific tests may differ from those carried out on sedentary individuals, such as using maximal sport specific testing.</p>
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Studied field based tests a GCSE

Lab tests-

$VO_2$  MAX [https://www.youtube.com/watch?v=Ad\\_sN6Vjt4E](https://www.youtube.com/watch?v=Ad_sN6Vjt4E)

Cycle ergometer test [https://www.youtube.com/watch?v=jQ\\_Qtu9qSLU](https://www.youtube.com/watch?v=jQ_Qtu9qSLU)

30s Wingate test- [https://www.youtube.com/watch?v=e-uaKhOAn\\_A](https://www.youtube.com/watch?v=e-uaKhOAn_A)



Components of fitness: health-related components (aerobic capacity, muscular strength, muscular endurance, body composition, flexibility) and skill-related components (agility, balance, co-ordination, speed, power and reaction time).

Methods of training: weight, continuous, fartlek, interval including high intensity training (HIT), plyometrics, circuit and mobility/flexibility.

Different components of fitness and their links with methods of training and specific sports/activities.

Specific applications of interval training depending on the activity. Links to component of fitness and energy systems.

Flexibility training including active, passive and ballistic stretching and proprioceptive neuromuscular facilitation (PNF).

Studied at GCSE. Use GCSE folders and Bitesize to recap

Content	Amplification
Environmental training.	Altitude training. Training in different climates.
Principles of training: specificity, progressive overload, reversibility and variance.	Weight training as a way to develop strength/power/muscular endurance. Frequency, intensity, time, type (FITT) principles.
Monitoring intensity of training.	Specific applications of the principles of training using % of maximum effort, use of precise times for exercise and recovery when designing specific training programmes.  Training zones and training thresholds. Borg's Rating of Perceived Exertion (RPE) and its uses. Use of heart-rate monitors.
Periodisation: use of macro, meso and microcycles and the structure of the training year.	

Environmental training- <https://www.youtube.com/watch?v=-1MpP3n155o>

Principles of training- studied at GCSE

Periodisation- <https://www.youtube.com/watch?v=prlyDNPYLJM>





<p><b>Energy systems and their application to training principles</b>          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.</p> <p>Energy continuum and its application in planning training programmes.</p>	<p>The predominant energy system used in relation to the type of exercise.          The inter-changing between thresholds during physical activity depending on intensity and duration of exercise and the fitness levels of the performer.          The importance of knowledge of <math>VO_2</math> max and the anaerobic threshold.</p> <p>Energy equations or knowledge of enzyme actions are <b>not</b> required.</p>
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Studied at GCSE but need to know in more detail

Aerobic system-[https://www.youtube.com/watch?v=n1WkxG-s\\_ul](https://www.youtube.com/watch?v=n1WkxG-s_ul)

ATP-PC-<https://www.youtube.com/watch?v=r9SFsWbMO0w>

Lactic acid system-[https://www.youtube.com/watch?v=B\\_0ttFE-0n4](https://www.youtube.com/watch?v=B_0ttFE-0n4)

<p><b>Fatigue and the recovery process</b>          Causes of fatigue and its effect on physical activity and sporting performance.</p> <p>Onset of blood lactate accumulation (OBLA) and delayed onset of muscle soreness (DOMS). Excess post-exercise oxygen consumption (EPOC).</p> <p>Factors that can potentially speed up the recovery processes: active cool down, ice baths, compression clothing, nutrition and supplementation and massage and their effects on recovery.</p>	<p>Links between fatigue and depletion of energy sources and increases in lactic acid (lactate).</p> <p>The effects of dehydration and the loss of electrolytes on performance. Oxygen deficit and oxygen debt.</p> <p>The alactic recovery stage of EPOC (fast replenishment – restoration of PC, and re-saturation of myoglobin) - how this occurs and the time taken. The lactic acid recovery stage of EPOC (slow replenishment - restoration of muscle glycogen stores and removal of lactic acid).</p> <p>The impact of cool down on the removal of lactic acid and the fate of lactic acid (Cori Cycle) carbon dioxide and water.</p>
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OBLA-<https://www.youtube.com/watch?v=W27vxQ8lbZs>

EPOC- <https://www.youtube.com/watch?v=BxFJDYLU50c>

<https://www.youtube.com/watch?v=Bjg9sSNjjAs>

Recovery processes- studied at GCSE



Content	Amplification
<p><b>Diet and nutrition and performance</b> Constituents of a balanced diet: relative proportions of carbohydrate, fat and protein.</p> <p>Kilo joules/calorific intake and energy balance for health and performance purposes. Basic functions of carbohydrates, fats and proteins in relation to health and sport specific performance. Glycaemic index (GI).</p> <p>Variations in diets for different activities and sports and types of training.</p> <p>Hydration in sport and the detrimental effects of dehydration on performance. Isotonic, hypotonic and hypertonic drinks.</p> <p>The use and misuse of supplements and ergogenic aids to training: protein (whey and casein), creatine and caffeine usage.</p>	<p>The role of carbohydrates, fats and proteins particularly as applied to training and performance.</p> <p>High, medium and low GI foods and how glycaemic knowledge could be beneficial when developing nutrition programmes for health and sporting performance.</p> <p>Food fuel usage variations with different exercise intensities, exercise duration and fitness levels.</p> <p>The importance of pre-competition meals and what to consume before, during and after exercise.</p> <p>Carbo-loading and the importance of depletion, repletion/loading and tapering.</p> <p>Hydration techniques for before, during and after exercise including an understanding of volumes and timings.</p> <p>The role of supplementation in sport, both positive and negative aspects.</p>

Diet- <https://www.youtube.com/watch?v=M2z78d2nfl4>

Supplements-<https://www.youtube.com/watch?v=0edpy67dT5U>

Carbo loading- <https://www.youtube.com/watch?v=iCpJa9LCPi8>