THE EARLS HIGH SCHOOL

EXCELLENCE | CARE | PARTNERSHIP

KS4 Curriculum overview: BTEC SPORT

Year 10 Curriculum Map

Autumn Term	Spring Term	Summer Term
Component 1: Preparing Participants to Take Part in Sport and Physical Activity • Types and provision of sport • Technology in sport • Planning and adapting a warm-up	Component 1: Preparing Participants to Take Part in Sport and Physical Activity • CONTROLLED ASSESSMENT Component 2: Taking Part and Improving Other Participants' Sporting Performance • Components of fitness • Participation in sport	Component 2: Taking Part and Improving Other Participants' Sporting Performance • Roles and responsibilities of officials • Improving participant performance

Year 11 Curriculum Map

Autumn Term	Spring Term	Summer Term
Component 2: Taking Part and Improving Other Participants' Sporting Performance • CONTROLLED ASSESSMENT Component 3: Developing Fitness to Improve Other Participants Performance in Sport and Physical Activity • Importance of fitness for sports	Component 3: Developing Fitness to Improve Other Participants Performance in Sport and Physical Activity • Fitness training • Fitness programmes	Component 3: Developing Fitness to Improve Other Participants Performance in Sport and Physical Activity • Fitness training • Fitness programmes

• Fitness testing		

EXAMINATION UNIT: Component 3: Developing Fitness to Improve Other Participants Performance in Sport and Physical Activity

SPECIFICATION

A Explore the importance of fitness for sports performance

A1 The importance of fitness for successful participation in sport

Learners will understand how each of the components of physical and skill-related fitness are required to perform well in selected sports and how these are used when playing in different positions in team sports.

● Types of sports requiring specific components of fitness:
- o aerobic endurance – events/sports lasting more 30 minutes
- o muscular endurance – events/sports lasting more 30 minutes
- o muscular strength – activities requiring force, e.g. throwing events
- o speed – activities requiring fast movement, e.g. sprinting
- o flexibility – activities requiring a wide range of movement around a joint, e.g. gymnastics, martial arts
- o body composition – low body fat, e.g. gymnastics, high muscle mass, e.g. sprinters
- o power – activities requiring explosive movement e.g. gymnastics, basketball
- o agility – activities requiring quick changes of direction, e.g. dodging the opposition in a team game, freestyle skiing
- o reaction time – any activity where a quick decision or response to a stimulus is needed
- o balance – an activity requiring the control of the distribution of weight or to remain upright and steady
- o coordination – any activity requiring the movement of two or more body parts and can include the use of sporting equipment, e.g. hand, eyes and tennis racquet to connect with the tennis ball.

A2 Fitness training principles

Learners need to be able to understand the principles of training and how they can be applied to training programmes.

- The basic principles of training frequency, intensity, time, and type (FITT):
    - o frequency – the number of training sessions completed over a period of time, usually per week
    - o intensity – how hard an individual will train
    - o time – how long an individual will train for
    - o type – how an individual will train by selecting a training method to improve a specific component of fitness.
- Additional principles of training:
    - o progressive overload – in order to progress, training needs to be demanding enough to cause the body to adapt, improving performance
    - o specificity – training should meet the needs of the sport, or physical/skill-related fitness goals to be developed
    - o individual differences – training should meet the needs of an individual
    - o adaptation – changes to the body due to increased training loads
    - o reversibility – if training stops, or the intensity of training is lowered, fitness gains from training are lost
    - o variation – altering types of training to avoid boredom and maintain motivation to train
    - o rest and recovery – to allow the body to recover and adapt.

A3 Exercise intensity and how it can be determined

Learners will understand exercise intensity and how it can be measured or worked out. They will also understand the target zones and the related technical vocabulary.

- Intensity:
    - o measure heart rate (HR)
    - o HR intensity to fitness training methods.
- Target zones and training thresholds:
    - o calculate training zones
    - o apply HR max to training
    - o aerobic training zone
    - o anaerobic training zone.
- The Borg (6–20) Rating of Perceived Exertion (RPE) Scale
    - o RPE x 10 = Heart Rate (HR).
- The relationship between RPE and heart rate where: RPE x 10 = HR (bpm).
- Calculate 1RM for strength and 15RM for muscular endurance.
- Technology to measure exercise intensity:
    - o heart rate monitors

- o smart watches
- o apps.

B Investigate fitness testing to determine fitness levels

Learners will understand why fitness testing is carried out and know how to set up and administer the protocol of each fitness test. Learners will also need to be able to use data from fitness tests and compare these to normative data tables to interpret the fitness test results.

B1 Importance of fitness testing and requirements for administration of each fitness test

Learners will be able to understand the purpose of fitness testing, know how to administer and select fitness tests for different types of sports and participants and interpret the fitness test results.

- Reasons for fitness testing:
  - o gives baseline data for monitoring/improving performance
  - o can design training programmes based on test results
  - o determine if training programmes are working
  - o results can give a performer something to aim for
  - o provide goal setting aims.
- Pre-test procedures:
  - o calibration of equipment
  - o complete informed consent
  - o complete Physical Activity Readiness Questionnaire (PAR-Q)
  - o participant pre fitness test check e.g. prior exercise participation.
- Knowledge of published standard test methods and equipment.
- Accurate measurement and recording of test results.
- Basic processing of test results for interpretation (using published data tables).
- Ability to safely select appropriate test(s) for given purposes, situations and/or participants.
- Reliability of test:
  - o consistency of results
  - o factors affecting reliability: – calibration of equipment; motivation of the participant; conditions of the testing environment (inside versus outside conditions); experience of the person administering the test; compliance with standardised test procedure.
- Validity of results.
- Practicality:
  - o cost
  - o time taken to perform the test
  - o time taken to set up the test

- time taken to analyse data
- number of participants that can take part in the test at any time.

B2 Fitness test methods for components of physical fitness

Learners should know which fitness tests are appropriate to test for each component of physical fitness. Learners should also understand the practicality and validity of these tests for each component of physical fitness and specific to different sports and their participants. Learners should also understand how to produce reliable fitness test results.

- Aerobic endurance:
  - multi-stage fitness test, also known as the bleep test (20 metre distance); Yo-Yo test; Harvard step test; 12-minute Cooper run or swim.
- Muscular endurance:
  - one-minute press-up; one-minute sit-up; timed plank test.
- Flexibility:
  - sit and reach test; calf muscle flexibility test; shoulder flexibility test.
- Speed:
  - 30 metre sprint test; 30 metre flying sprint.
- Muscular strength:
  - grip dynamometer; 1 Rep Max.
- Body composition:
  - Body Mass Index (BMI), Bioelectrical Impedance Analysis (BIA); waist to hip ratio.

B3 Fitness test methods for components of skill-related fitness

Learners should know which fitness tests are appropriate to test for each component of skill-related fitness. Learners should also understand the practicality and validity of these tests for each component of skill-related fitness and specific to different sports and their participants. Learners should also understand how to produce reliable fitness test results.

- Agility:
  - Illinois agility run test; T Test.
- Balance:
  - stork stand test; Y balance test.
- Coordination:
  - Alternate-Hand Wall-Toss test, stick flip coordination test.
- Power:
  - vertical jump test, standing long/broad jump, Margaria-Kalamen power test.
- Reaction time:
  - ruler drop test, Online reaction time test (reaction test timer).

B4 Interpretation of fitness test results

Learners should be able to use normative data tables to interpret fitness test results. They should also be able to interpret the data to recommend improvements to the performer from the results.

- Comparison to normative published data.
- Analyse and evaluate test results.
- Recommendations for improvements to fitness performer based on test results.

C Investigate different fitness training methods Learners should know about different types of training method to develop different components of fitness.

C1 Requirements for each of the following fitness training methods ***Learners should know how to carry out fitness training safely and effectively as part of a training programme.***

- Warm-up prior to taking part in the fitness training method – pulse raiser, mobility and stretch; reduce the risk of injury, prepare the body for exercise.
- Cool down after taking part in the fitness training method – gradually lower pulse and breathing rate to resting levels; remove lactic acid; stretch to help return muscles to pre-exercise length.
- Linking each fitness training method to the associated component of fitness.
- Application of the basic (FITT) and additional principles of training to each fitness training method.
- Application of appropriate training intensities to fitness training methods.

C2 Fitness training methods for physical components of fitness

Learners should be able to suggest and justify appropriate physical fitness training methods that could be used for specific sports participants for different ages and different sporting abilities.

- Aerobic endurance:
    - o continuous training – steady pace and moderate intensity for a minimum period of 30 minutes
    - o Fartlek training – the intensity of training is varied by running at different speeds and/or over different terrain
    - o interval training – work period followed by a rest or recovery period
    - o for aerobic endurance decrease the number/length of rest periods and decrease work intensity (compared to speed training)
    - o circuit training – use of a number of stations/exercises completed in succession with minimal rest periods in between to develop aerobic endurance.
- Flexibility:
    - o static active – the performer applies internal force to stretch and lengthen the muscle
    - o static passive – requires the help of another person or an object, e.g. a wall to apply external force causing the muscle to stretch

- Proprioceptive Neuromuscular Facilitation (PNF) technique – the technique involves the use of a partner or immovable object, isometric muscle contractions to inhibit the stretch reflex.

- Muscular endurance:
  - free weights and fixed resistance machines – high repetitions and low loads
  - circuit training – using body resistance exercises or weights with low loads and high repetitions.
- Muscular strength training:
  - free weights and fixed resistance machines – high loads and low repetitions.
- Speed:
  - acceleration sprints – pace is gradually increased from a standing or rolling start to jogging, then to striding, and then to a maximal sprint
  - interval training – work period followed by a rest or recovery period. For speed short, high intensity work periods, increasing the number of rest periods and
    increasing work intensity (compared to aerobic endurance training)
  - resistance drills – hill runs, parachutes, sleds, bungee ropes, resistance bands.

C3 Fitness training methods for skill-related components of fitness

Learners should be able to suggest and justify appropriate skill-related fitness training methods that could be used for specific sports participants that are different ages and different sporting abilities.

- Agility:
  - Speed Agility and Quickness training (SAQ) – drills used to develop physical ability and motor skills.
- Power:
  - plyometrics – lunging, bounding, incline press-ups, barrier hopping and jumping.
- Balance:
  - use of specific training exercises that require balancing on a reduced size base of support.
- Coordination:
  - use of specific training exercises using two or more body parts together.
- Reaction time:
  - use of specific training exercises to practise quick responses to an external stimulus.

C4 Additional requirements for each of the fitness training methods

- Advantages and disadvantages – to include number of people that can take part, cost of equipment, ease of set up, access to venue/location of training, risk of injury to the performer if performed incorrectly, effectiveness of training for given sports performer, specificity to component of fitness, replicating demands of the sport.

C5 Provision for taking part in fitness training methods

Learners should know about the providers of fitness training and how their provision varies in relation to types of equipment available, cost, other support available and access.

- Public provision – advantages and disadvantages.
- Private provision – advantages and disadvantages.
- Voluntary provision – advantages and disadvantages.

C6 The effects of long-term fitness training on the body systems

Learners should know how training methods affect the different body systems, which can lead to adaptations to improve specific components of fitness.

- Aerobic endurance training:
    - o adaptations to the cardiovascular and respiratory systems
    - o cardiac hypertrophy
    - o decreased resting heart rate
    - o increased strength of respiratory muscles
    - o capillarisation around alveoli.
- Flexibility training:
    - o adaptations to the muscular and skeletal systems
    - o increased range of movement permitted at a joint
    - o increased flexibility of ligament and tendons
    - o increased muscle length.
- Muscular endurance training:
    - o adaptations to the muscular system
    - o capillarisation around muscle tissues
    - o increased muscle tone.
- Muscular strength and power training:
    - o adaptations to the muscular and skeletal systems
    - o muscle hypertrophy
    - o increased tendon and ligament strength
    - o increased bone density.
- Speed training:
    - o adaptations to the muscular system
    - o increased tolerance to lactic acid.

D Investigate fitness programming to improve fitness and sports performance

D1 Personal information to aid fitness training programme design

- Aims – details of what they would like to achieve for the selected sport.
- Objectives – how they intend to meet their aims using an appropriate component of fitness and method of training.
- Lifestyle and physical activity history.
- Attitudes, the mind and personal motivation for training.

D2 Fitness programme design

- Use personal information to aid training programme design.
- Selection of appropriate training method/activity for improving/maintaining the selected components of physical and/or skill-related fitness.
- Application of the FITT principles and additional principles of training.

D3 Motivational techniques for fitness programming

- Definition of motivation – the internal mechanisms and external stimuli that arouse and direct behaviour.
- Types of motivation:
    - o intrinsic
    - o extrinsic.
- Principles of setting goals to increase and direct motivation.
- Personal goals – specific, measurable, achievable, realistic, time-related, exciting, recorded (SMARTER):
    - o short-term goals (set over a short period of time, between one day and one month)
    - o long-term goals (what they want to achieve in the long term, and the best way of doing this).
- Influence of goal setting on motivation:
    - o provide direction for behaviour
    - o maintain focus on the task in hand.
- Benefits of motivation on the sports performer:
    - o increase participation
    - o maintain training and intensity
    - o increased fitness
    - o improved performance