YEAR 10 & 11 PHYSICAL EDUCATION SCHEME OF WORK - THEORY

This is a two-year course based on OCR Physical Education G.C.S.E. (1827) Full Award. The syllabus id divided into two main areas:

a) A theory section

This section is examined by a written examination - Paper 1 (1 hour 45 minutes) and is worth 40% of the final mark. The content is divided into three sections:

Section A: Exercise and training.

Section B: Safety aspects and risk assessment in sport and physical activity.

Section C: Applied anatomy and physiology.

b) Practical activities section

This section – Paper 2, includes practical assessment in four activities and is worth 60% of the final mark. There are also four areas of assessment in this section:

a) Practical assessment during the course (25%)

b) Analysis of performance (10%)

c) Final practical assessment (25%)

SCHEME OF WORK FOR THE THEORY SECTION

SECTION C – Applied anatomy and physiology

C1 – The Circulatory system

1 Structure of the heart – Use of models/heart dissection to identify the main structures of the heart.

2 The heart as a pump – Use of I.C.T. to demonstrate the pumping action of the heart, relate to exercise and physical activity.

3 Define heart rate, stroke volume and cardiac output and relate to changes that occur during physical activity.

4 Structure of arteries, veins and capillaries – discuss the similarities and differences and explain how these might be affected during exercise.

5 Structure and function of blood cells – compare the structure to the function and relate to their importance during training.

C2 – The Respiratory system

1 Structure of the breathing system – label diagrams relate to function.

2 Discuss the importance of the nasal passages and relate to exercise.

3 Describe and explain the mechanism for breathing using a working model of the lung. Discuss the relative composition of inhaled and exhaled air.

4 Explain the chemistry of respiration, use of equation to illustrate the use of glucose and oxygen.

5 Discuss the production of carbon dioxide, water and the release of energy. Illustrate differences in CO_2 and water production practically.

6 Discuss the differences between aerobic and anaerobic respiration in relation to exercise. Explain the conditions, which cause oxygen debt and lactic acid production in muscles.

7 Illustrate the differences between tidal volume and vital capacity using practical measurements.

C3 – Bones

1 Describe the process of ossification and identify the composition of bones.

2 Explain the importance of bones for body shape and size. Discuss the importance of diet and exercise in maintaining bone strength.

3 The structure and function of the skeleton – use of model skeleton to identify the main bones of the body. Classify bones into types – long, short, flat (plate) and irregular.

4 Explain the main functions of the skeleton – shape, protection, movement, support and blood production.

C4 – Joints, tendons and ligaments

1 Discuss the definition of the term joint and its importance in exercise and sport.

2 Identify and draw the main types of joints – hinge, pivot and ball and socket. Explain the importance of joint flexibility during exercise.

3 Explain and draw a synovial joint and discuss the dangers of potential injuries during exercise.

4 Introduce terms to describe the movement of specific joints – extension, adduction, abduction and rotation.

5 Describe and illustrate the differences between tendons and ligaments – particularly in terms of areas of attachment and when and why they operate.

C5 – Muscles and muscle action.

1 Identify the main types of muscle – voluntary, involuntary and cardiac, give examples and relate to sport.

2 Label and identify the main muscles of the body.

3 Identify and explain the function of antagonistic muscles using the biceps/triceps and the hamstrings/quadriceps as examples.

4 Discuss and explain the terms fast and slow twitch muscle fibres and relate to sporting activity.

5 Explain the term muscle tone and relate it to maintaining good posture and fitness.

6 Discuss how muscle strength, endurance, size and action can be improved by fitness and training.

SECTION A – EXERCISE AND TRAINING

A1 – Reasons for taking part in activity

1 Discuss the three ways that physical activity helps the body – helps to feel and look good, enhances body shape and contributes to good health.

2 Discuss why physical activity can help to relieve stress/tension and stress related illness.

3 Discuss reasons for participation in sporting activities – co-operation, competition, physical challenge and aesthetic appreciation.

4 Recognise the social importance of physical activity.

A2 – Health, fitness, exercise and performance.

1 Define health and fitness and exercise.

2 Explain performance in terms of how well a task is completed.

3 Define cardiovascular fitness and discuss its importance to health.

4 Define muscular strength, muscular endurance, flexibility and body composition.

A3 – Skill related fitness.

1 Define the following list and explain each factor is important to physical activity:

Agility
Balance
Co-ordination
Power
Reaction time
Speed

A4 – Principles of training

1 Define the terms overload, progression and specificity.

2 Explain what is meant by meeting individual needs and thresholds of training.

3 Discuss the FITT principle, moderation and reversibility.

4 Discuss how to use these principles to plan a Personal Exercise Programme (PEP)

A5 – Methods of training.

1 Explain and discuss the differences between the terms isotonic and isometric contraction.

2 Discuss the following methods of training and show how each is important:

Circuit
Weight
Interval
Continuous cross
Fartlek.

3 Plan and perform a six week Personal Exercise Programme (PEP)

4 Discuss the meaning of an exercise session to involve a warm-up, a main activity and a cool-down.

5 Discuss the role of aerobic and anaerobic activity in relation to exercise.

6 Discuss the immediate and the long-term benefits of exercise on bones, joints and muscles, the cardiovascular and respiratory.

7 Explain the terms recovery rates, plot examples on a graph and evaluate the results.

8 Explain the use of target zones.

A6 – Diet, health and hygiene.

1 Discuss the importance of a balanced diet and the use of carbohydrates, proteins, fats, vitamins, minerals, water and fibre when exercising.

2 Define the terms overweight, over fat and obese.

3 Discuss and draw different body types (Somatotypes) including Endomorph, Mesomorph and Ectomorph.

4 Explain the importance of diet during training and how under eating and overeating can affect performance.

5 Discuss the effects of smoking, alcohol and drugs on health and performance.

6 Discuss the dangers of the use of performance enhancing drugs.

7 Discuss the importance of personal hygiene during sporting activity and explain how diseases athlete's foot and verrucae can be recognised and treated.

SECTION B – SAFETY ASPESTS AND RISK ASSESSMENT IN SPORT AND PHYSICAL ACTIVITY.

B1 – Prevention of injury

1 Discuss the importance of the rules of the game, correct clothing and equipment, warm-up and cool-down activities and balanced competition help in the prevention of injury.

B2 – Sports injuries

1 Identify the basic signs and symptoms and the preventative measures of the following conditions:

Fractures
Joint injuries
Unconsciousness/concussion
Soft tissue damage
Skin damage
Dehydration and hypothermia
D.R.A.B.C. and resuscitation
Recovery position
R.I.C.E.