Edexcel BTEC Nationals in Sport – Extended Certificate

Welcome to BTEC Sport. Some of you will have studied BTEC Sport at Level 2 so already hold some knowledge of the work that will be covered in year 12. The following activities will give you the opportunity to develop your understanding of key components of the course.

Please email both pieces of work to Mr North (Deputy Head of 6th Form)

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Task 1: Anatomy & Physiology

Due in: September 2022 (Completion time: 5 hours)

You will explore the structure of the skeletal, muscular, cardiovascular, respiratory and energy systems. The anatomy and physiology of each body system and their processes are very different but work together to produce movement.

Complete the worksheets (attached). Add your own additional notes if you wish.

1.1 Label the Skeletal system
1.2 Describe the different classification of joints
1.3 Label the major muscles of the body
1.4 Describe the action of muscle movement
1.5 Label the heart
1.6 Label the respiratory system
1.7 a) Describe the mechanics of breathing & 1.7 b) Describe the process of gaseous exchange
1.8 Describe ATP and the ATP – ADP cycle

To help you with your research find below some useful links that will help:

1.1 – 1.2 Skeletal System

Major bones: https://www.youtube.com/watch?v=LMZStgTd-Tw

Joint classification: https://www.youtube.com/watch?v=JbT-oygHL-w

Bone types and functions: https://www.youtube.com/watch?v=mMecn9S4zW4&t=7s

1.3 – 1.4 Muscular System

Major muscles: https://www.youtube.com/watch?v=utQK-NIL9t0

Antagonistic pairs: https://www.youtube.com/watch?v=qg65ZlIK73A

1.5 The Cardiovascular System

The Heart: https://www.youtube.com/watch?v=K5vtafmTrNw

Blood Vessels: https://www.youtube.com/watch?v=JzWhZMwlqCw

1.6 – 1.7 The Respiratory System

The Lungs: https://www.youtube.com/watch?v=_RKe8gBvJ_M

Lung Volumes: https://www.youtube.com/watch?v=N1fUpzIATxo

1.8 Energy System

ATP – The role of ATP: https://www.youtube.com/watch?v=S-TE_3iYBCk

ATP-PC System: https://www.youtube.com/watch?v=TBDSpOnzFAo

Task 2 – Long Answer Exam Questions

Due in: September 2022 (Completion time 10 hours)

This task requires you to apply your knowledge and understanding of each body system to a sporting example and to develop your long answer writing technique.

- Each question has been scaffolded, highlighting what you need to include in each part of your answer to ensure that you achieve the required depth of application, analysis and evaluation.
- PEEL is a good approach to use because it allows you to reach the highest levels of application and analysis in one well-developed and argued paragraph point: **Point, Explain, Evaluate, Link.**
- Key words to use in your answers and command words can be found in the glossary (see pages 3 & 4).
- Refer to the videos/notes from question 1 to ensure you understand each body system in order to answer the question.
- You can attempt the questions in any order.
- Spend 2 hours on each question – this will give you the opportunity to watch the videos, research, make notes and plan before answering.
- Each answer should be between 1 – 2 sides of A4; remember to follow the scaffold to ensure you cover all points.

Questions: (Scaffolding sheets attached)

2.1	Analyse how different types of bones help a rugby player to perform.
2.2	Describe how the quadriceps and hamstrings work antagonistically when performing a squat.
2.3	Explain the role of different blood vessels in the transportation of blood to and from the heart.
2.4	Explain how the mechanism of breathing sustains performance for a marathon runner?
2.5	When we take part in sport or physical activity, we get tired. How long we take to recover will depend on the intensity of exercise. Explain the role of ATP in sport and physical activity and how it is resynthesized?

Glossary

Q1.

Key Words	
• Long • Short • Flat • Sesamoid • Irregular • Movement • Support • Weight bearing	• Attachment of muscles • Protection • Reduce friction across a joint • Red blood cell production

Q2.

Key Words
• Concentric/Eccentric • Origin • Insertion • Agonist • Antagonist • Synergist • Fixator

Q3.

Key Words	
• Arteries • Veins • Capillaries • Muscular walls • Oxygenated/Deoxygenated blood	• Valves • Pressure • Towards the heart • Away from the heart

Q4.

Key Words
• Pulmonary ventilation • Inspiration • Intercostal muscles • Diaphragm • Thorax • Air pressure • Expiration

Q5.

Key Words	
• Adenosine triphosphate • Phosphate • Binding • Bond • Adenosine diphosphate	• Energy • Rechargeable battery • Three seconds • Muscle

Command Words	Meaning
Analyse	Learners examine in detail in order to discover the meaning or essential features of a theme, topic or situation, or break something down into its components or examining factors methodically and in detail. To identify separate factors, say how they are related and explain how each one contributes to the topic
Describe	Learners give an account, or details, of 'something' or give an account of a 'process'.
Explain	Set out in detail the meaning of something, with reasons. More difficult than describe or list, so it can help to give an example to show what you mean. Start by introducing the topic then give the 'how' or 'why'

Reading List:

BTEC Nationals Sport Student Book 1 + Activebook

Publisher: Pearson

Author: Adam Gledhill,Richard Taylor,Louise Sutton,Matthew Fleet,Chris Manley,Alex Sergison,Chris Lydon

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