

BTEC Assignment Brief

Qualification	Pearson BTEC Level 1/Level 2 Tech Award in Sport, Activity and Fitness
Component number and title	1: Understand the Body and the Supporting Technology for Sport and Activity
Learning aim	A: Investigate the impact of sport and activity on the body systems
Assignment title	The Impact of Sport and Activity on the Body Systems
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	You have secured a voluntary work placement at a local sports club who are looking to run some sessions with children in the local community to improve their understanding of the impact that sport and physical activity have on the body systems. You have been asked to assist by producing and delivering a presentation to a community group as well as providing a written handout/leaflet containing relevant information for all to take away with them.
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Task 1a	<p>To allow you to successfully complete this task you should first carry out some research into:</p> <p>The cardiorespiratory system (cardiovascular and respiratory):</p> <ul style="list-style-type: none"> • structures of the cardiovascular system – atria, ventricles, septum, tricuspid, bicuspid and semi-lunar valves, aorta, vena cava, pulmonary artery, pulmonary vein • structures of the respiratory system – lungs, bronchi, bronchioles, alveoli, diaphragm • functions of the cardiorespiratory system <p>The musculoskeletal system (muscular and skeletal):</p> <ul style="list-style-type: none"> • location of the major muscles – deltoid, biceps, triceps, pectoralis major, latissimus dorsi, external obliques, hip
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	<p>flexors, gluteus maximus, quadriceps, hamstrings, gastrocnemius and tibialis anterior</p> <ul style="list-style-type: none"> location of the major bones – cranium, clavicle, scapula, five regions of the vertebral column (cervical, thoracic, lumbar, sacrum, coccyx), ribs, sternum, humerus, radius, ulna, carpals, metacarpals, phalanges (in the hand), pelvis, femur, patella, tibia, fibula, tarsals, metatarsals, phalanges (in the foot) functions of the musculoskeletal system. <p>Once completed you should produce a leaflet that can be handed to the children that will:</p> <ul style="list-style-type: none"> Explain the structures of the cardiovascular system locating the key parts - atria, ventricles, septum, tricuspid, bicuspid and semi-lunar valves, aorta, vena cava, pulmonary artery, pulmonary vein. Explain the functions of the cardiovascular system. Explain the structures of the respiratory system locating the key parts - lungs, bronchi, bronchioles, alveoli, diaphragm. Explain the functions of the respiratory system. Explain how the respiratory and cardiovascular systems work together. Explain the structures of the muscular system locating the major muscles - deltoid, biceps, triceps, pectoralis major, latissimus dorsi, external obliques, hip flexors, gluteus maximus, quadriceps, hamstrings, gastrocnemius and tibialis anterior. Explain the structures of the skeletal system locating major bones - cranium, clavicle, scapula, five regions of the vertebral column (cervical, thoracic, lumbar, sacrum, coccyx), ribs, sternum, humerus, radius, ulna, carpals, metacarpals, phalanges (in the hand), pelvis, femur, patella, tibia, fibula, tarsals, metatarsals, phalanges (in the foot). Explain the functions of the musculoskeletal system. Explain how the muscular and skeletal systems work together. <p>Make sure your leaflet is eye catching and informative.</p>
<p>Checklist of evidence required</p>	<ul style="list-style-type: none"> Leaflet.
<p>Task 1b</p>	<p>You now need to consider your research and how long-term participation can impact on sports and activity performance to create a presentation for the children.</p>

	<p>You should ensure the presentation is informative and includes the following:</p> <ul style="list-style-type: none"> • The effects of regular participation on components of fitness, e.g. how can regular aerobic exercise improve cardiovascular fitness or muscular endurance or body composition. • Explains the long-term effects of exercise on the cardiorespiratory system: <ul style="list-style-type: none"> ○ cardiac hypertrophy ○ drop in resting heart rate ○ drop in resting blood pressure ○ increase in red blood cells ○ drop in blood viscosity (thickness of the blood) ○ increased vital capacity ○ improved efficiency of gaseous exchange. • Explains the long-term effects of exercise on the musculoskeletal system; <ul style="list-style-type: none"> ○ increased bone density ○ increased joint strength of tendons and ligaments ○ muscle hypertrophy ○ strengthening of core muscles. <p>You should go on to analyse how regular participation leads to long-term physical benefits in the body systems.</p> <p>Finally, you should select three sporting activities and evaluate the extent to which each of these would benefit from adaptations to the musculoskeletal and cardiorespiratory systems.</p>
Checklist of evidence required	<ul style="list-style-type: none"> • Presentation. • Record of Activity (provided by your teacher)

Criteria covered by this task:	
Component/ Criteria reference	To achieve the criteria you must show that you are able to:
A.2D1	Evaluate the extent to which different sports activities benefit from adaptations to the musculoskeletal and cardiorespiratory systems.
A.2M1	Analyse how regular sports participation leads to long-term physical benefits in the body systems.
A.2P2	Explain the long-term adaptations to body systems caused by regular participation in sport and activity.

A.2P1	Explain the structure and functions of the muscular, skeletal, respiratory and cardiovascular systems.
A.1M2	Outline some of the long-term adaptations to body systems caused by regular participation in sport and activity.
A.1M1	Outline the structures and functions of the musculoskeletal and cardiorespiratory systems.
A.1P2	Identify some of the long-term adaptations to body systems caused by regular participation in sport and activity.
A.1P1	Identify the structures of the muscular, skeletal, respiratory and cardiovascular systems.

Sources of information to support you with this Assignment	<p>Websites</p> <p>Free resources for Physical Education and sports coaching</p> <p>www.teachpe.com</p> <p>www.brianmac.co.uk/trainprog</p> <p>www.livestrong.com/fitness</p> <p>www.sport-fitness-advisor.com</p> <p>www.thinqfitness.com/video.asp</p>
Other assessment materials attached to this Assignment Brief	<i>None</i>

Notes to the assessor (to be removed before distribution to learners):

Approach to teaching and learning to support learners to 'get it right first time'	<p>Pearson expects that before the assignment brief is distributed to learners they should have already:</p> <ul style="list-style-type: none"> attempted formative assessment tasks that replicate important elements of the activities to be carried out in this assignment received feedback on how they performed including what they did well and how they can further improve including both the quality of their work and the way they went about their work. <p>It would be most beneficial for learners to explore the individual elements of the assignments task before attempting to put them all together in a mock assessment.</p> <p>This will help learners to do their best first time and reduce the likelihood of learners needing to do a resubmission.</p>
The scenario	The 'scenario' can be adapted to any situation that would allow the learner to carry out research on how user interface meets user interface

	<p>design principles, how they vary across different uses, devices and purposes.</p> <p>The selection of the user interfaces is critical, the user interfaces should provide sufficient coverage of Learning Aim A, Teaching content and focus on the user interfaces used by individuals and organisations allowing the learner to provide detailed and relevant user interface examples.</p> <p>The assignment provides a realistic vocational context for the learning aim. It would not be good practice to artificially force this assignment into a 'vocational role' that is either:</p> <ul style="list-style-type: none"> a) not realistic to the level of the learner/qualification b) not directly relevant to the qualification. <p>In this instance the learner should have full access to pre-defined user interfaces so that they can be full interrogated and provide the learner with the opportunity to access Learning Aim A requirements.</p>
<p>The task</p>	<p>The task set is holistic and allows the learner to be assessed against what is a continuum of effectiveness. Therefore, learners should not be asked to complete separate tasks for each criterion.</p> <p>Evidence submitted must be produced by the individual learner, and not as a contribution as part of a team. This means the learners must carry out research on different types of user interfaces used by individuals and organisations, analyse the varying needs of the audience and how these affects both the type and design of the interface and how design principles provide both appropriate and effective user interaction with hardware devices.</p> <p>Print screens of the relevant detailed examples should support the analysis carried out by the learner.</p> <p>The planning and initial design of the user interface, using the design principles listed in section A3, will be undertaken in Learning Aim B Assessment. For Learning aim C the learner will Develop and review a user interface.</p> <p>For this assignment, learners must have access to: a range of user interfaces from different applications/devices, e.g. tablets, watches, software applications, websites, apps.</p> <p>Centres are encouraged to adapt the task providing the requirements of the assessments is maintained and are encouraged to use the Assignment Checking Service available to centres if they do so.</p>
<p>Evidence checklist</p>	<p>For this instance, a report or podcast or presentation with speaker notes would allow the opportunity for the learner to provide an analysis of how two different types of user interface meet the design principles and user needs. Annotated screen prints of the user interfaces reviewed would support the evidencing of this learning aim.</p> <p>It is important that the evidence provided can be independently authenticated by both an Internal Verifier (IV) and a Standards Verifier</p>

	<p>(SV). It is, therefore, required that there is evidence of the investigation taking place.</p> <p>In this instance, there is no requirement for the learner to submit a Record of Activity, e.g. observation record or witness statement.</p>
<p>Sources of information to support you with this Assignment</p>	<p>Sources of information should directly support the learner to complete the assignment. Sources of information are not intended to form additional teaching and learning. Centres should ensure that all teaching and learning has been completed before distributing the assignment to learners.</p> <p>It is advisable that a mixture of theoretical sources and sources directly contextualised to planning, pitching and running an enterprise will give learners the best opportunity to achieve their best.</p>
<p>Other materials</p>	<p>This Authorised Assignment Brief does not include any materials to support learners.</p> <p>It is expected that learners produce their own evidence.</p> <p>Therefore, the provision of templates is not appropriate in this instance.</p>
<p>Your assessment decision</p>	<p>You will notice that the assessment criteria form a 'continuum of effectiveness'.</p> <p>Therefore, when assessing the learners work rather than assessing the achievement of each criterion separately you should start at the distinction criteria and work backwards to find the point at which the learner meets the targeted criteria.</p>