WORCESTER
SIXTH FORM COLLEGE

Sport and Exercise Science Level 3 Applied

Summer Tasks 2020

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1. Thinking of studying Applied Sport and Exercise Science at Worcester Sixth Form College?

We teach the Pearson specification for the Sport and Exercise Science Level 3 Applied Course.
If you want to find out more about the course and each of these units, you can find the full specification on the Pearson website: https://qualifications.pearson.com/en/qualifications/btec-nationals/sport-and-exercise-science-2016.html

Course Content

Year 1 units to be covered:

- Specialised Fitness Training
- Functional Anatomy (Exam)
- Applied Sport and Exercise Psychology (Controlled Assessment)
- Field and Laboratory-based Fitness Testing
- Applied Research Methods in Sport and Exercise Science
- Sports Injury and Assessment

Year 2 units to be covered:

- Physical Activity for Individual and Group based Exercise
- Sport and Exercise Physiology (Exam)
- Sociocultural Issues in Sport and Exercise
- Nutrition for Sport and Exercise Performance (Controlled Assessment)
- Sports Massage
- Coaching for Performance and Fitness
- Biomechanics in Sport and Exercise Science

2. Tasks to complete before September

In order to prepare for the course, you need to complete the tasks in this booklet.
Before you begin, find a folder to store this booklet or keep it secure electronically and all the notes that you make on the tasks. **You need to bring in this folder at the start of the course.** Make sure that your notes are neat and well-organised!

Most of the content in these tasks will be directly assessed and it will help to prepare you for the Sport and Exercise Science course.

BTEC: UNIT 2 FUNCTIONAL ANATOMY

Learners explore how the anatomy of the cardiovascular, respiratory, skeletal and muscular systems function to produce movements in sport and exercise.

This unit is assessed by a written examination set and marked by Pearson. The examination will be one hour and 30 minutes in length. The number of marks for the assessment is 60. The paper will contain a number of short and long-answer questions that will assess learners' understanding of the anatomy of the cardiovascular, respiratory, skeletal, and muscular systems. Learners will use their knowledge and understanding of the different systems to analyse how they produce movements in sport and exercise, including how they interrelate to carry out those movements.

Key Words for each learning outcome!

Understanding the command words for different levels is vitally important for success. Below are the assessment outcomes and the sample words that may be used in your exam for the different levels. Fill in the definition of these words on the right-hand side on the table for AO1, AO2, AO3 and AO4.

AO1 Demonstrate knowledge and understanding of the language, structure, characteristics and function of each anatomical system Command words: describe, give, identify, name, state Marks: range from 1 to 4 marks

AO2 Apply knowledge and understanding of the structure, characteristics and function of the anatomical systems in context Command words: describe, explain Marks: range from 2 to 4 marks

AO3 Analyse the anatomical systems' effectiveness in producing sport and exercise movements and evaluate their impact on performing movements successfully Command words: analyse, assess, evaluate, discuss, to what extent Marks: range from 8 to 14 marks

AO4 Make connections between anatomical systems and how they interrelate in order to carry out different exercise and sporting movements in context Command words: analyse, assess, evaluate, discuss, to what extent Marks: range from 8 to 14 marks

Task One: Define the Key Words for AO1

Give	
Describe	
Identify	
Name	
State	

Key Words for AO2

Describe	
Explain	

Key Words for AO3 and AO4

Analyse	
Assess	
Evaluate	
Discuss	
To what extent	

Task Two

Anatomical language

Learners must understand anatomical language to describe different parts of the body in reference to their correct location.

Using the youtube link provided: https://youtu.be/ySXJjZhVKtk please define the key anatomical language that will guide you through the functional anatomy unit.

Anterior	
Posterior	
Superior	
Inferior	
Medial	
Lateral	
Distal	
Proximal	
Supine	

Prone	
Deep	
Superficial	
Peripheral	

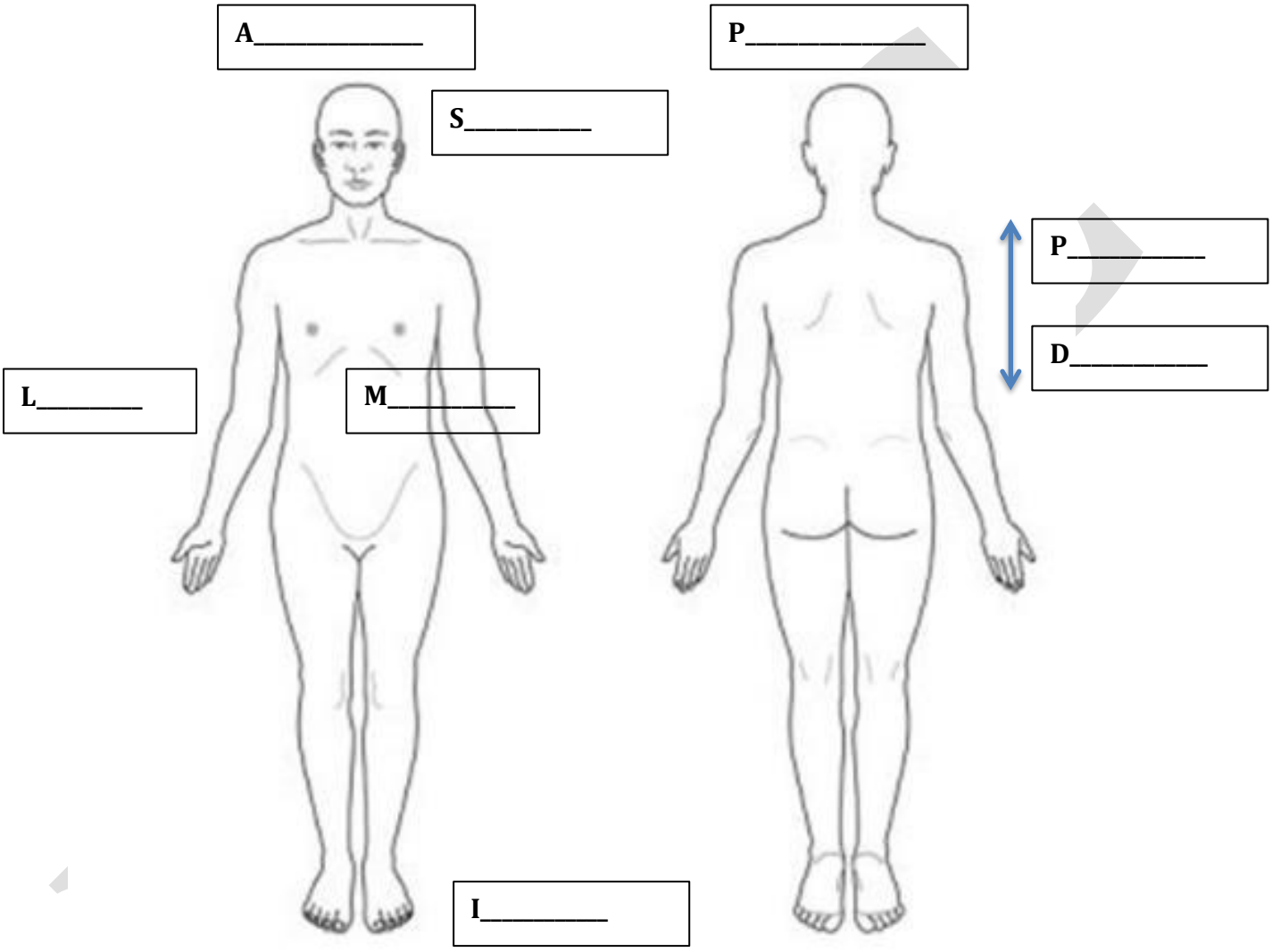
Task Three

Anatomical language

Learners must understand anatomical language to describe different parts of the body in reference to their correct location.

Anatomical position

Using the youtube link and key terms provided, please fill out the diagram of the anatomical position below:

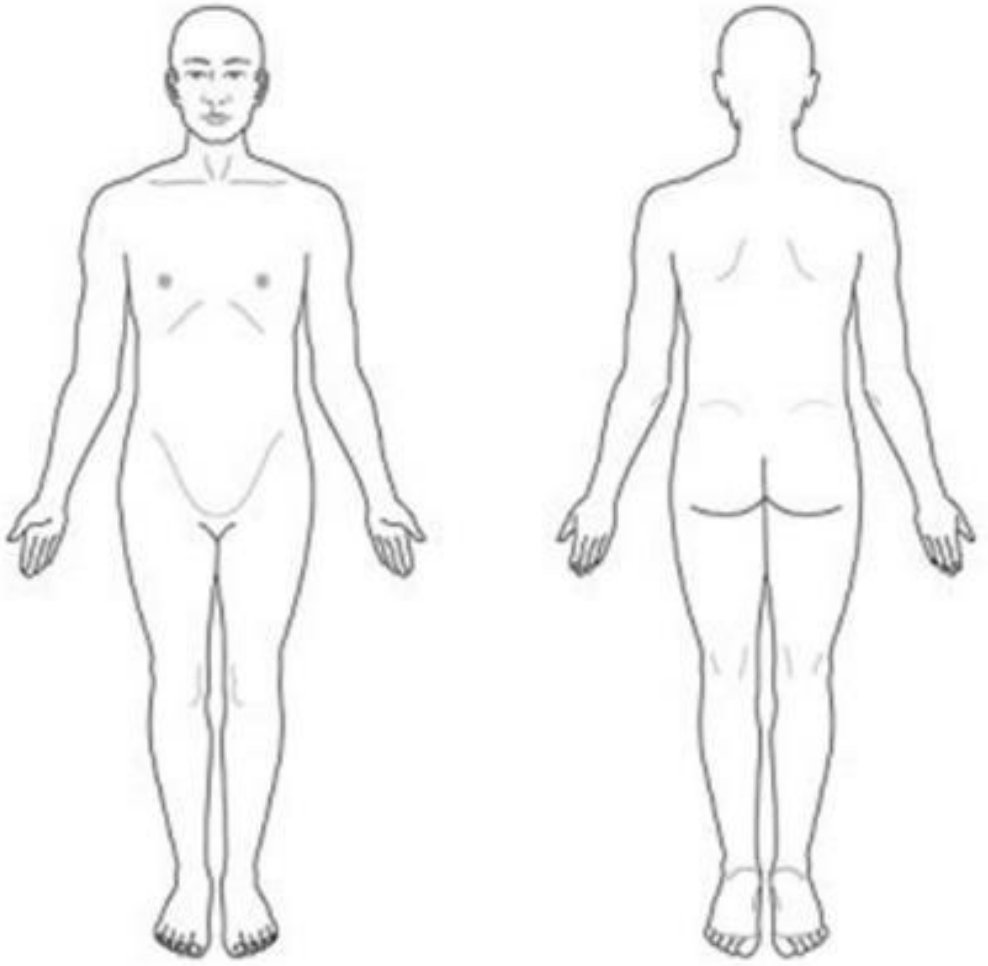


- Anterior
- Posterior
- Medial
- Lateral
- Distal
- Proximal
- Superior
- Inferior

Deep: A position farther from the surface of the body. The brain is deep to the **S_____.**
Superficial: A position closer to the surface of the skin. The skin is superficial to the **B_____.**
Supine: Lying facing up
Prone: Lying facing **D_____.**
Peripheral: "away from the centre" the hands are peripheral to the **S_____.**

Anatomical position

Now fill out the diagram of the anatomical position below from memory:



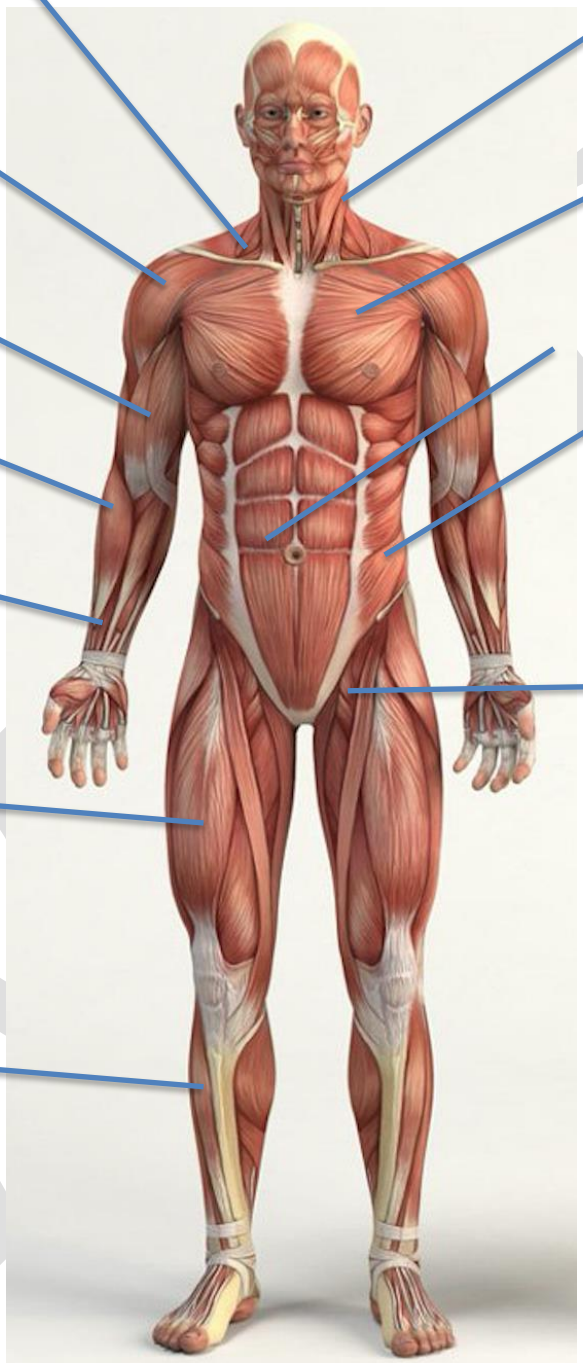
Task Four

Muscular system

Learners must know the location of skeletal muscle:

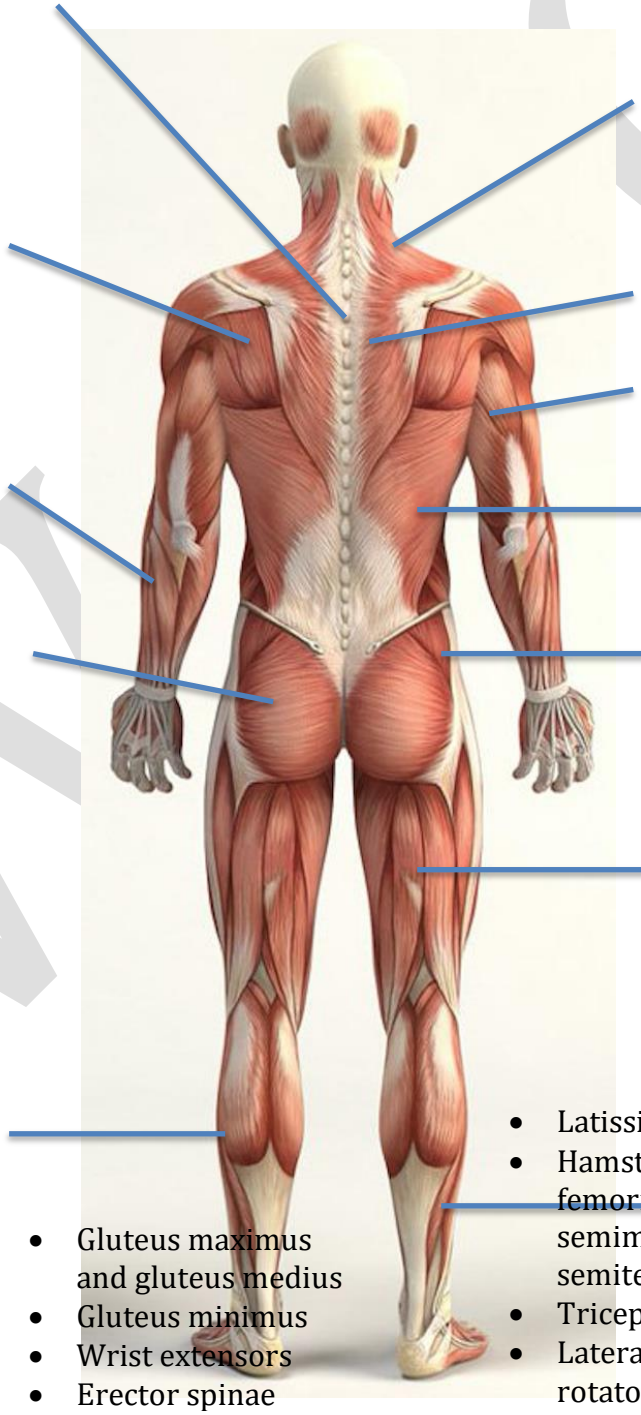
Using the youtube link and key terms provided, please label the **anterior** and **posterior** muscle diagrams on the next page:

Anterior view



- Deltoids
- Sternocleidomastoid
- Tibialis anterior
- Quadriceps (Rectus femoris, vastus lateralis, vastus medialis and vastus intermedius)
- Wrist flexors
- Supinator and pronator
- Rectus abdominis
- Obliques
- Transverse abdominis
- Biceps brachii
- Pectoralis major
- Iliopsoas
- Trapezius

Posterior view



Underneath trapezius:

- Trapezius
- Rhomboids
- Gastrocnemius
- Soleus

- Gluteus maximus and gluteus medius
- Gluteus minimus
- Wrist extensors
- Erector spinae

- Latissimus dorsi
- Hamstrings (Biceps femoris, semimembraneous, semitendinosus
- Triceps brachii
- Lateral shoulder rotators

Task three

Anatomical language and muscles

Using your knowledge gained from task one and task two please fill in the gaps below. The sentences provided require you to fill in the blanks; some of the blanks refer to muscles others refer to anatomical language.

1. The Biceps Brachii is **anterior** to the **T_____ B_____**

2. The gastrocnemius is **P_____** to the tibalis anterior.

3. The Pronator and **S_____** muscles are **P___x____** to the wrist flexors.

4. The **O_____** are on the **L_____** aspect of the body compared to the Rectus abdominals.

5. The vastus intermedius muscle of the quadriceps group is closer to the bone than the rectud femoris. Therefore the vastus intermedius us **D_____** compared to the rectus femoris, which is **S_____.**

6. The bottom of the tibia bone is both **I_____** and **D_____** compared to the top of the tibia bone.

7. The chest is **A_____** to the back.

8. The muscle on the chest is called the **_____ M_____.**

9. The quadriceps muscle group is made up of four muscles; these include the **R_____ F_____** muscle, the **V_____ M_____** muscle, the **V_____ L_____** muscle and the **V_____ I_____.**

10. The hamstring muscles are made up of three muscles; these include the **B_____ F_____, S____m_____** and the **S_____t_____.**

Unit 8: Specialised Fitness Training - Fitness Demands of Sport

Chosen sport:

Fitness Component	What is it? When is it used? Why is it required (importance)?	How will this fitness component influence their training programme?	What will their programme need to include? What training methods? Provide example exercises.
Cardiovascular Endurance			
Strength			
Muscular Endurance			
Explosive Power			
Speed			
Flexibility			

Task: Explain how the fitness demands influence the planning of an athletes training. Completing this task help you prepare for the first assignment for unit 8. Answer the questions using your own knowledge and information researched from the internet.

Unit 3 Applied Sport and Exercise Psychology

Task: Read the article on Mental Rehearsal in Sport (by clicking on the following weblink) and complete the tasks below: http://psychology.iresearchnet.com/sports-psychology/psychological-skills/mental-rehearsal-in-sport/

1. Summarise what Mental Rehearsal is and why it is beneficial to use it to help sports performance.
2. Explain what Imagery is and how it is used in sport. Give an example.
3. Explain how Observation is used in sport and give a sporting example.
4. Explain Self-Talk

5. Briefly explain how you could use the above mental rehearsal techniques in your sport

Applied Research Methods in Sport and Exercise Science

There has long been an appreciation of the role of research in sport and exercise sciences. Research has been central to the growth and development of each of the different disciplines in sport and exercise sciences, with sport and exercise scientists recognising the need for a strong evidence base behind their day-to-day work with clients.

Examples of research having a positive effect on sport are;

- Understanding which footwear will provide a runner with the best cushioning and performance to reduce chances of injury and allow them to reach their fitness goal
- Which energy drink provides the body with the best fuel for the type of sport needed
- It provides people with an understanding of which type and method of training would benefit an athlete; for example, research has shown that an increase in flexibility for the hamstring muscle will give sprinters a better running stride (this is called gait). This increased stride length over 100m could increase their performance by 0.5 seconds which could be the difference in winning or losing.

To gather information researchers must test products, people, resources and ideas to see if it has a positive effect on performance. This takes time and equipment. When you gather information yourself this is called **primary data**. To help researchers get a base knowledge on topic areas they would look at other researcher's information and then compare their new found data to others which is called **secondary data**. Secondary data is used to either support or argue research.

Student application

<u>Task 1</u>

You or a member of your family or a friend must do the 1-minute press up test. Which is a test to see how many press ups you can do in 1 minute.

Score _____

This is the correct technique for a press up

You are now to compare your result to normative (average) data found on the internet. You are to search 'press up test normative data' and find a good table which highlights which category you would fall into. For example, a student could do 20 press ups in a minute which could put them in the 'fair' category.

What was your score based on the normative data? _____

From the two parts of the above application task which is primary data and which is secondary data?
Primary data is when I

……..

Secondary data is I

……..

When collecting information there will always be errors. As a researcher you must make sure that these errors are minimised to ensure the data you collect is accurate. These are classed as Validity and reliability issues.

Validity is whether the test used is the best at collecting the most accurate data

Reliability is used to show how good the person, device or both are at collecting the data. Do they produce the same results every time? If so then these are reliable.

Using the internet find out if the press up test is a valid way of measuring muscular endurance and explain if it is or is not.

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……

……

……

What reliability issues could there be when performing and comparing the 1-minute press up test?

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……

……

Task 2

Name a valid fitness test for each of the following components

Fitness component	A valid Test	Possible reliability issues
Strength		
Aerobic Endurance		
Flexibility		
Speed		

3. Optional Task

Research what careers the Sport and Exercise Science Course could lead too.

https://www.youthemployment.org.uk/how-can-a-btec-get-you-into-a-sports-career-meet-yvan-zahui-personal-trainer/

https://targetcareers.co.uk/careers-advice/a-level-choices/1033936-taking-level-3-btec-sport-and-exercise-science

https://www.prospects.ac.uk/careers-advice/what-can-i-do-with-my-degree/sport-and-exercise-science

https://www.bases.org.uk/imgs/bases_careers_guide_non_members_version622.pdf