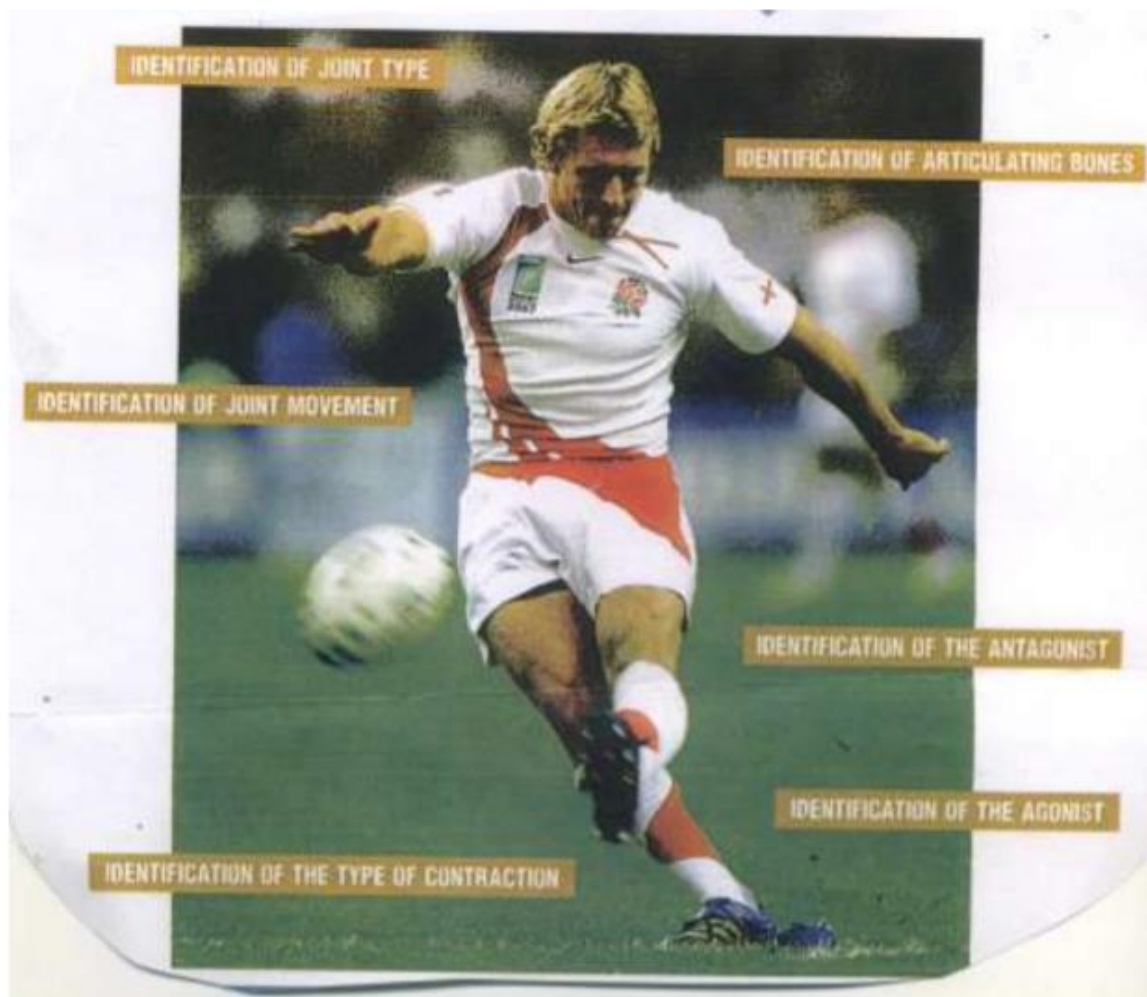


A LEVEL PE SUMMER WORK

Welcome to A level Physical Education. This is a linear course examined at the end of the second year by a combination of exams (70%) and coursework (30%). The exam board is Edexcel.

The summer work will give you some idea of the type of work that will be covered and the level of difficulty of the course. One aspect of A Level PE that you will study in the first term is movement analysis. Movement analysis involves an understanding of the skeletal and muscular system and how they work together to provide movement in sport.

For example, the movement analysis involved in kicking a football or tennis serve. You will be required to answer a movement analysis question in your exam. This question will require the following information...



Rugby goal kick – Jonny Wilkinson executive phase

Resources for this task and for the A level PE course

1. I recommend that you refer to the Edexcel PE for A Level Year 1 book for information. It is a book we use widely on the course. (ISBN 9781911241119. Jan Roscoe publishing)
2. The website www.teachpe.com is useful so is the link below as it will lead you to other links.
3. https://www.google.com/search?q=Best+A+level+P.E+websites&rlz=1C1GCEB_enGB944GB944&oq=Best+A+level+P.E+websites&aqs=chrome..69i57.12773j0j1&s
3. There are useful documents on the Edexcel website for A Level PE. They provide materials for the whole course rather than this task alone.
4. Any problems or questions please don't hesitate to contact me at patrick.oneill@taw.org.uk
5. We expect you to spend time on the summer tasks and produce your best possible work.

Task 1: Joint Types and Articulating Bones

To allow you to gradually build up your knowledge there are four tasks that build on one another. Whilst there is repetition between tasks, this is deliberate and aims to reinforce some learning through repetition. For task 1, you have to identify the synovial joint type and articulating bones in a series of common joints found in the body.

KEY TERMS

A **synovial joint** is a joint that allows a wide range of movement and which is composed of two or more bones which exist in a joint capsule.

Articulating bones are bones that move against one another within a joint.

Complete the table below

Joint	Joint Type	Articulating bones
Elbow		
Knee		
Ankle		
Shoulder		
Hip		
Wrist		
Trunk	Cartilaginous	Vertebrae

Task 2: Adding joint movements

There are a series of possible movements that can occur at joints. These vary from joint to joint based on the type of joint, the shape of the joint and the connective tissues around the joint (ligaments, tendons & muscles). The most common joint movements are identified below. Please add definitions.

Joint Movement	Definition
Flexion	
Extension	
Abduction	
Adduction	
Horizontal Extension	
Horizontal Flexion	
Medial Rotation	
Lateral Rotation	
Dorsi Flexion	
Plantar Flexion	
Circumduction	

Now add possible joint movements (only from the above list) to the table below. The number of spaces in the final column indicates the number of joint movements possible at the named joint.

Joint	Joint Type	Articulation bones	Joint Movements			
Elbow						
Knee						
Ankle						
Shoulder			1.	2.	3.	
			4.	5.	6.	7.
Hip			1.		3.	
			2.		4.	
					5.	
Trunk						

Task 3: The Agonist Muscle

Student name: _____

Complete the table below by finding the agonist muscle. The muscle that causes the joint movement

Joint	Joint Type	Articulating bones	Joint movement	Agonist muscle(s)
Elbow				→
				→
Knee				→
				→
Ankle				→
				→
Shoulder				→
				→
				→
				→
			Horizontal adduction	→
				→
			Rotation	→ Subscapularis/ → infraspinatis
Hip				→
				→
				→
				→
			Rotation	→ Gluteus medius → Gluteus maximus
Trunk				→
				→
				→

Task 4: Applying theory to practice

Well done if you have got this far! The final task involves taking what you have learnt and applying it to a series of sporting pictures to test your application of knowledge.



It is helpful to answer the moment analysis question in a table format. It structures your answer and makes sure you don't leave out any information.

Example: in the upward phase of a bench press the table would be as below:-



Upward phase of bench press

Joint	Joint Type	Articulating bones	Joint movement	Agonist	Muscle contraction type
Elbow	Hinge	Humerus, radius & ulna	Extension	Triceps brachii	Concentric
Shoulder	Ball & socket	Scapula and humerus	Horizontal adduction	Pectoralis major & anterior deltoid	Concentric

The Vertical Jump. Complete the box below based on what is shown in the picture



Joint	Ankle	Knee	Hip
Joint type			
Articulating bones			
Joint movement			
Agonist			
Muscle contraction type			

Biceps Curl- Upward phase. (Picture B) Complete the box below based on what is shown in the picture



Joint	Joint type	Articulating bones	Joint movement	Agonist	Muscle contraction type
Elbow					

Well done on completing the PE Summer work