



Year 12
Summer Transition Work

PE
Exam Board – OCR

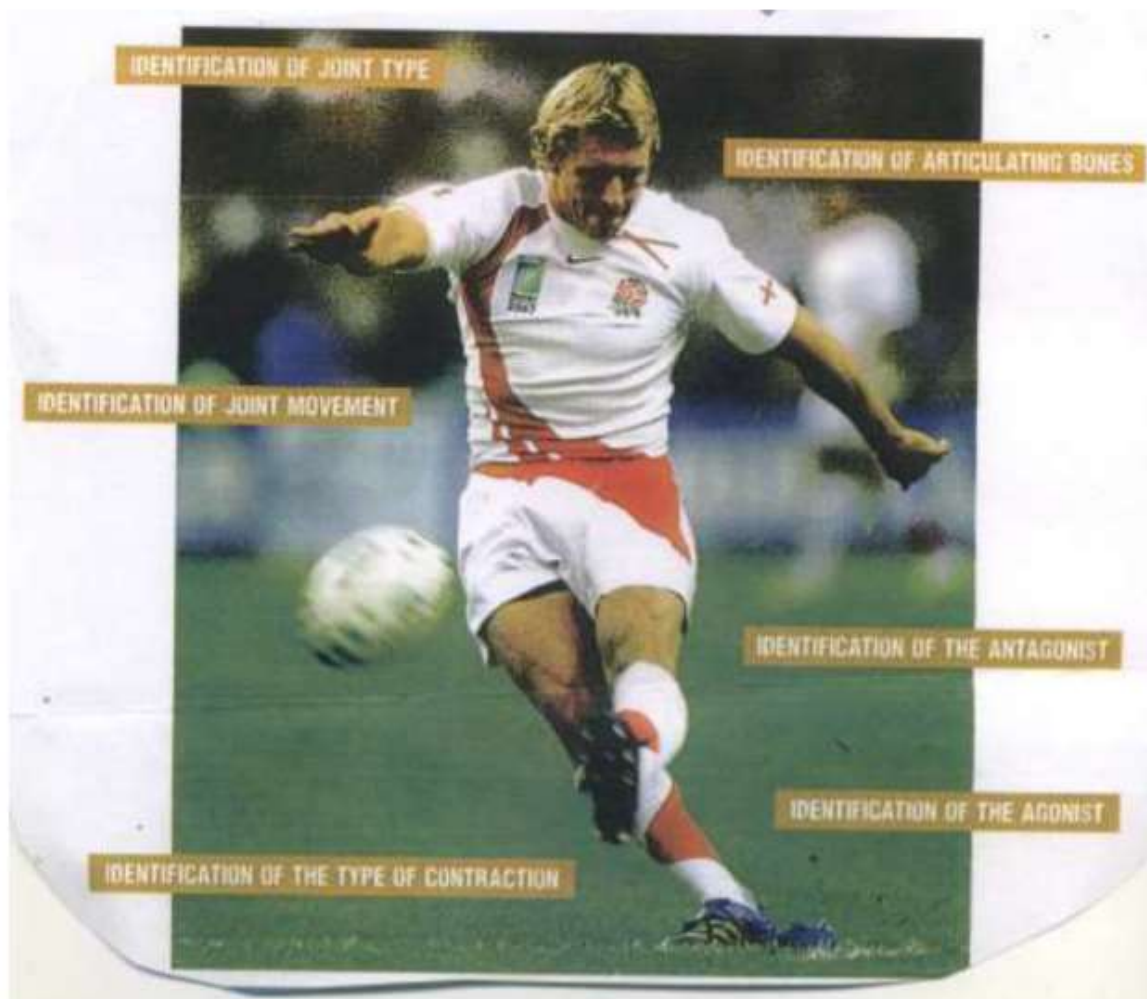
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THE BECKET – A LEVEL PE SUMMER WORK

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 OCR.

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 OCR PE for A Level Year 1 book for information. It is a book we use widely on the course.
2. The website www.teachpe.com
3. There are useful documents on the OCR website on the 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 on d.marlow@becketonline.co.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.

| 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