

A Level PE

Summer Transition Work



Bones, Joints, Muscles & Movement

Name



Skeletal and Muscular systems

Hi Team,

Welcome to the A Level PE summer preparation work. Below you will find information on the course, as well as research and preparation tasks. The idea of the prep work is to give you an insight into the first topic we will be studying, as well as preparing you for Level 3 study. Have a great summer and we cannot wait to meet you all in September.

Complete what you can and please bring this booklet with you to enrolment in September. We will contact you with more details regarding enrolment in the coming weeks. You can complete on paper or on the computer, this is completely up to you.

Please also review the Intro lesson that goes with this booklet that can be found on our website regarding the Sport & PE courses that we offer at Wyke. If you have any questions regarding the summer prep work or anything Sport or PE related; OR if on completing this booklet, you would like support in completing additional preparation work over the summer, please email chris.bolder@wyke.ac.uk. Please also give our Instagram page a follow, which will give you an insight into sport at Wyke as a whole on: @wykecollegepesport

Have a great summer and see you all in September ☐

#Teamwyke



Resources

www.innerbody.com

www.teachpe.com

www.quizlet.com

www.eaverleaner.com

OCR A Level PE by Hodder

Advance your knowledge

PE review magazine

Sport and Exercise Science (BASES) magazine

Recommended Viewing

Michael Jordan's: The last Dance

Science of Ronaldo

Fittest on Earth

Blindside

Icarus

Invictus

Grid Iron Gang

Greatest game on earth

Moneyball

Remember the Titans

Course Info

	CTEC Extended Certificate in Sport	A-level Physical Education
Entry Requirements	4 in GCSE English and Maths	4 in GCSE English and Maths 5 in GCSE PE or Science Must play competitive sport/coach on a regular basis over two years at Wyke
UCAS Points	D* = 56 D = 48 M = 32 P = 16	A* = 56 A = 48 B = 40 C = 32 D = 24 E = 16
Assessment Methods	<ul style="list-style-type: none"> ✓ 42% External Assessments ✓ 58% Coursework; which varies from written reports, practical assessments, presentations, etc. ✓ Option to re-sit up to 3 times ✓ Modular; assessments are sat regularly over the course of 2years and accumulate into a grade 	<ul style="list-style-type: none"> ✓ 70% Externally Examined ✓ No option to re-sit ✓ 1 x 2hr exam, 2 x 1hr exams ✓ All occur at the end of 2nd year
Content Covered	<ul style="list-style-type: none"> ✓ Unit 1: Body Systems and the Effects of Physical Activity (externally assessed) ✓ Unit 2: Sports Coaching and Activity Leadership ✓ Unit 3: Sports Organisation and Development (externally assessed) ✓ Unit 17: Sports Injuries and Rehabilitation ✓ Unit 18: Practical Skills in Sport and Physical Activities 	<ul style="list-style-type: none"> ✓ Component 1: Physiological Factors in Sport ✓ Component 2: Psychological Factors in Sport ✓ Component 3: Socio-cultural Issues in Sport ✓ Component 4: NEA (Non-Examined Assessment): Assessment of level of practical ability in chosen sport + verbal analysis assessment
Progression Option Notes	Suitable for students aiming for University, an apprenticeship, or employment	Suitable for students aiming for University, an apprenticeship, or employment. Some institutions recognise this qualification as a science-equivalent for progression onto Physiotherapy
Other Info	Also available in a larger size qualification (3 x a-level equivalent) as a full-time course – please see website for Extended Diploma course overview	
* Students can opt to study both subjects if they wish! *		

TASK 1 The Skeleton

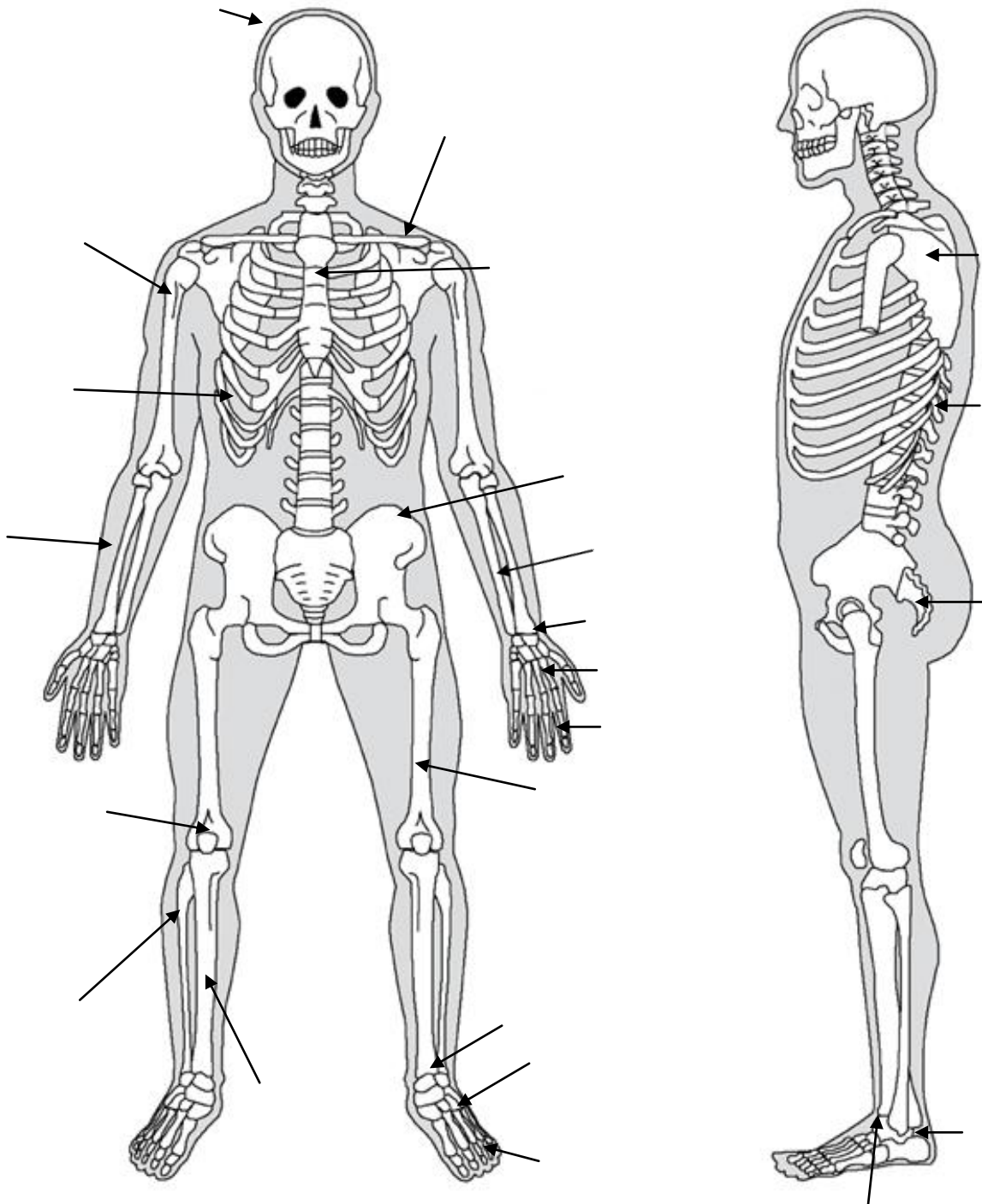
There are 206 bones in the human body. On the PE and Sports course, we need to know around 25 (Including the different sections of the spine, vertebral column). Using the resources available please Identify the functions of the skeleton as well as labelling the bones.

Function1 –

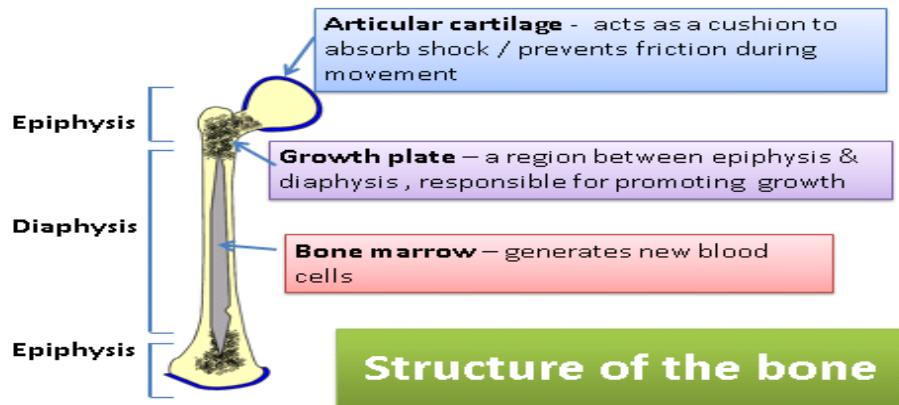
Function3 -

Function2 -

Function4 -



Structure of the bone



Ossification

process.....how does bone grow

- ⇒ Initially made out of cartilage
- ⇒ Ossification starts (in diaphysis then epiphysis)
- ⇒ a plate of cartilage is left between the diaphysis & epiphysis to allow growth
- ⇒ Once matured, plate fuses & becomes bone

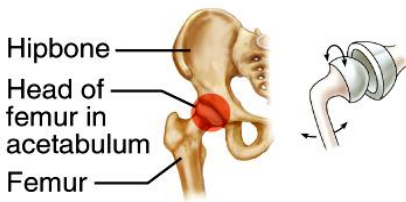

TASK 2 Joints of the Body

A joint is a place where two or more bones meet (articulate). There are three types of joints found in the body. Fibrous (immovable), cartilaginous (slightly moveable) and synovial (freely moveable)

Your research task is to Complete the following tables giving examples of the different types of joints. You must then specifically look and research “Synovial Joints”. These are the types of joints we will focus on during the PE and Sports courses.

Type of joint	Mobility	Stability	Example
Fibrous / immovable	No movement	Most stable	
Cartilaginous / semi moveable	Little movement	Stable	
Synovial / freely moveable	Free movement	Least stable	

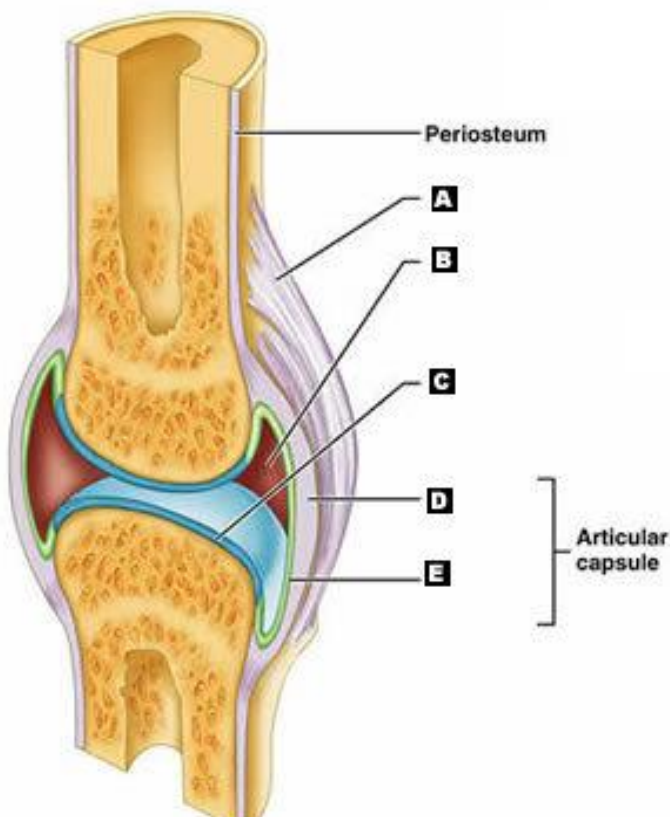
Complete the following table

Type of synovial joint	Examples from skeleton	Description
Ball & Socket Give two examples		 <p>(a) Ball-and-socket joint A ball shaped head of one bone articulates with a cup like socket of an adjacent bone</p>
Hinge Give two examples		 <p>(d) Hinge joint</p>

		A cylindrical protrusion of one bone articulates with a trough-shaped depression of an adjacent bone
Pivot		A rounded or pointed structure of one bone articulates with a ring-shaped structure of an adjacent bone.
Condyloid	<p>(b) Condyloid joint</p>	Similar to a ball & socket joint but with much flatter articulating surfaces forming a much shallower joint
Gliding		Articulating surfaces are almost flat and of a similar size

Structure and function of Synovial Joints

A synovial joint can be identified by the types of structures around it. Please label the 5 structures that EVERY synovial joint has. You may need to reference where you found this information.



A-

B-

C-

D-

E-



Well done on labelling the synovial joint. The next part of the research task is to describe the roles of these structures. Each one has a specific job, and remember to reference where you found this information.

Functions and job roles for each of the synovial joint structures

Ligaments –

Articular cartilage -

Joint capsule –

Joint Cavity –

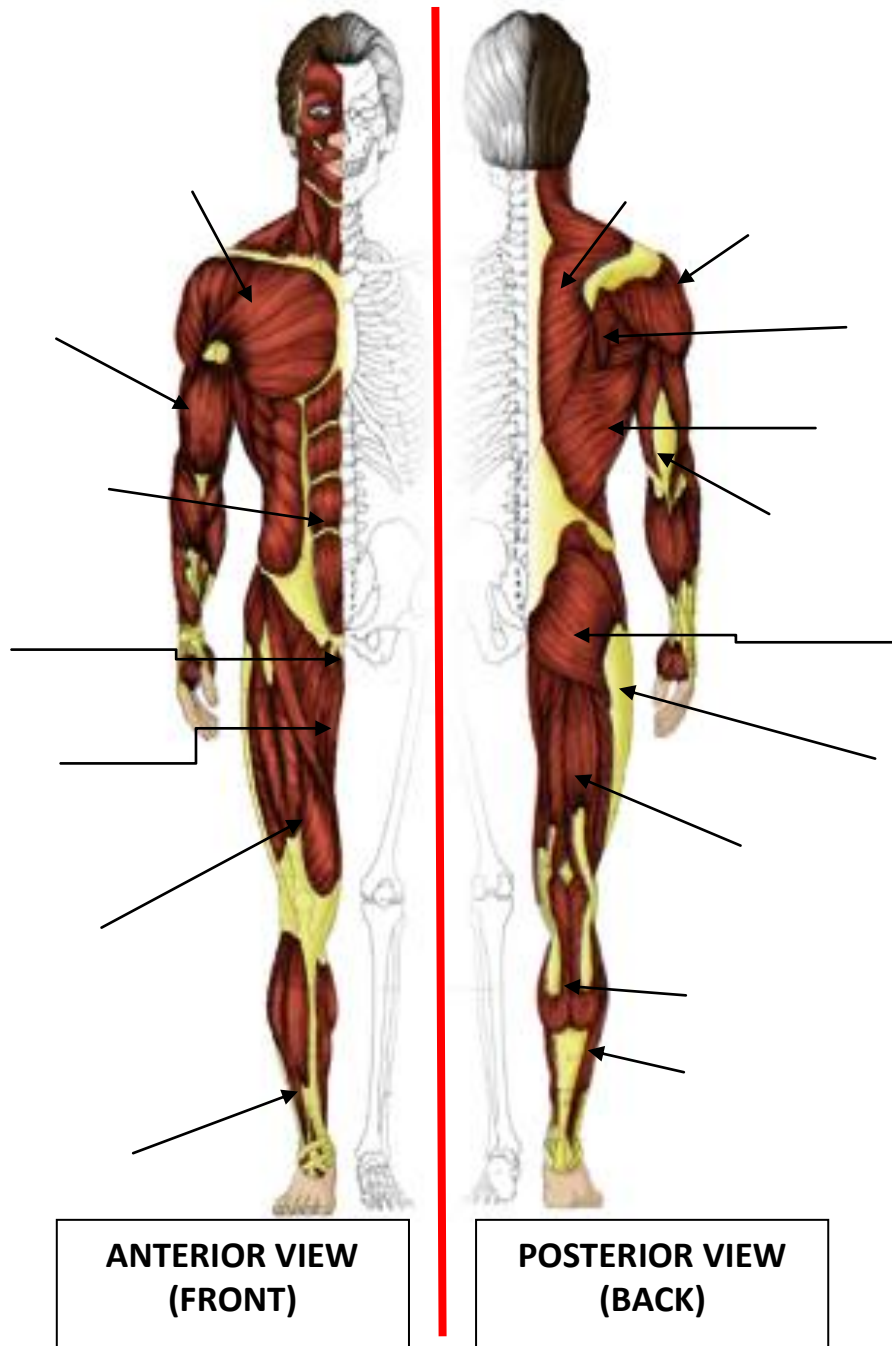
Synovial fluid –

Tendon -

TASK 3 Muscles

There are three types of muscles found in the human body and we will look at all of them over the course of the two years you are with us. The type of muscle that we will first learn about in September is Skeletal muscle. This is muscle that attaches itself to the skeleton to enable our joints to move. During sport and exercise skeletal muscle contracts to enable our joints to move.

Examples of skeletal muscles could be the Gastrocnemius (calf), Rectus Femoris (Quadricep). As part of your course we have to learn a number of skeletal muscles and by their technical name. Using the resources provided and the list of muscles on the next page please label the anatomical human below labelling all the required muscles.



On the next page are the list of muscles you need to be able to label



SKELETAL MUSCLES

ANTERIOR	POSTERIOR
Tibialis Anterior	Triceps Brachii
Pectoralis Major	Deltoid Group (Anterior, Posterior, Middle)
Rectus Abdominus	Rotator Cuff group
Quadricep Group (Rectus Femoris, Vastus Medialis, Vastus Lateralis, Vastus Intermedius)	Trapezius
Iliopsoas	Latissimus Dorsi
Adductor Longus	Gluteus Maximus
Biceps Brachii	Gluteus Medius
	Gastrocnemius
	Soleus
	Hamstring Group (Semimembranosus, Semitendinosus, Biceps Femoris)

Core Stability

Understand your core.....core stability muscles contract to act as stabilisers, prior to movement. **ISOMETRIC CONTRACTION**

What are the core stability muscles?

- 1.
- 2.

A strong core stability gives you:

- A more stable centre of gravity/mass
- Reduced risk of injury/pain (especially lower back)
- Improved posture and body/spine alignment
- Creates a more stable platform allowing more efficient movement

Weak core muscles can make you susceptible to **poor posture**, muscular instability/injuries, nerve irritation & lower back pain

Rotator Cuff

The rotator cuff muscles work together to provide the shoulder joint with dynamic stability, helping control the joint during rotation.

What are the rotator cuff muscles?

- 1.
- 2.
- 3.
- 4.



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