|  |  |
| --- | --- |
| **Subject level** | A-level |
| **Teacher** | Zoe Bailey |
| **Subject Context** | The anatomy and physiology of the human body is integral to the study of sport. Understanding how our body operates allows us to begin to understand, control and improve human movement. |
| **Deadline** | Start of the 2021 academic year. |
| **Resources required** | Laptop (or pen and paper)Internet (desirable not essential)[www.brianmac.co.uk](http://www.brianmac.co.uk) [www.theeverleaner.com](http://www.theeverleaner.com) NewspapersTV news reports |
| **Assignment details** | Complete the nine tasks. There is an extension activity at the end should you wish to complete the assessment questions. |

**Task One – the Skeletal system**

Label the skeleton using the bones below.

* Axial skeleton, i.e.
* cranium
* sternum
* ribs
* vertebral column
* cervical vertebrae
* thoracic vertebrae
* lumbar vertebrae
* sacrum
* coccyx

**Appendicular skeleton, i.e.**

* scapula
* clavicle
* humerus
* Ulna
* Radius
* Carpals
* Metacarpals
* phalanges
* ilium
* ischium
* pubis
* femur
* patella
* tibia
* fibula
* talus
* tarsals
* metatarsals

**Task Two – The Vertebral column**

Name/label the bones of the vertebral column & add any other relevant detail. Consider the structure and function.

**Task Three – Quick review:**

1. Name three bones of the appendicular skeleton

2. Name three bones of the axial skeleton

3. What are the five key functions of the skeleton?

**Task Four – Bones and joints of the skeleton**

Research and answer the following questions:

1. Give one function of a long bone and a different function of a flat bone.
2. Aside from long and flat bones, name the other three types of bone
3. Are the vertebrae: (tick the correct answer)
4. Fixed joints
5. Slightly moveable joints
6. Freely moveable joints
7. Give the other name for freely moveable joints
8. Apart from ‘Hinge’ joint, name the other five different types of freely moveable joint.

**Task Five – The Muscular system**

Label the muscle diagram below using the muscles that operate around each of the named joints.

**shoulder** – deltoid, latissimus dorsi, pectoralis major, trapezius, teres major

**elbow** - biceps brachii, triceps brachii

**radio-ulnar** - pronator teres, supinator muscle

**wrist** - wrist flexors, wrist extensors

**vertebral column** - rectus abdominus, erector spinae group, internal and external obliques

**hip** – iliopsoas, gluteus maximus, gluteus medius, gluteus minimus, adductor longus, adductor brevis, adductor magnus

**knee** - rectus femoris, vastus medialis, vastus intermedius, vastus lateralis, biceps femoris, semimembranosus, semitendinosus

**ankle** - tibialis anterior, gastrocnemius, soleus





**Task Six – The muscle**

Answer the following questions:

1. What is the difference between a ligament and a tendon?
2. There are three different muscle fibre types. Identify their structure, function and the type of activity in which they would dominate.

|  |  |  |  |
| --- | --- | --- | --- |
| Name  | Structural characteristics (how they’re made) | Functional characteristics (what job they do) | Type of activity |
| Slow oxidative (Type I) |  |  |  |
| Fast oxidative glycolytic (FOG) (Type IIa) |  |  |  |
| Fast twitch glycolytic(FTG)(Type IIb or IIx) |  |  |  |

**Task Seven - The three Energy Systems**

Research and complete the table below:

|  |  |  |  |
| --- | --- | --- | --- |
|  | ATP-PC/Alactic System | Lactic Acid System | Aerobic System |
| Type of Reaction (Aerobic or Anaerobic)  |  |  |  |
| Chemical/Substrate or Food fuel (what is broken down) |  |  |  |
| Amount of ATP produced  |  |  |  |
| By-products |  |  |  |
| Additional Info |  |  |  |

**Task Eight – Sociological issues in sport**

Write a 500 word report on the impact of Coronavirus on sport and physical activity in the UK. You may want to consider some, none, or all of the below bullet points:

* What sports/physical activities had their participation reduced, and why?
* What sports/physical activities saw an increase in participation and why?
* Restrictions on and differences between grassroots and elite sport
* Impact on training and competition
* The impact on mental health of restrictions in sport.

**Task Nine - Optional Extension Activity – Assessment practice questions**

These are from the A level textbook we use and have been taken from previous exam papers.

