Component 1: Scientific Principles of Physical Education

Unit 1.1 Muscular Skeletal System

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| Knowledge and understanding of the anatomy and physiology of the muscular and skeletal systems. Application of this understanding to physical activity and sport through the content listed below. |
| 1.1.1 Names of muscles and bones. Understanding of the types of movements during physical activities at the regions/joints listed in the table. |
| Region/ joint  | Muscle(s)  | Bone(s)  | Movement |
| Shoulder  | Trapezius, Posterior deltoids, Anterior deltoids, Pectoralis, Latissimus dorsi | Humerus, Clavicle, Scapula | Horizontal flexion, Horizontal extension, Abduction, Adduction, Rotation, Circumduction |
| Hip | Gluteus, Hamstrings, Psoas major | Pelvis, Femur | Flexion, Extension, Abduction, Adduction, Rotation, Circumduction |
| Elbow | Biceps brachii, Triceps brachii | Radius, Ulna, Humerus | Flexion, Extension |
| Leg and knee | Quadriceps, Hamstrings, Gastrocnemius, Soleus | Femur, Patella, Tibia, Fibula | Flexion, Extension |
| Ankle and foot | Gastrocnemius, Soleus, Tibialis anterior | Tibia, Fibula, tarsals, Metatarsals, Phalanges | Plantar flexion, Dorsi flexion, EversionInversion |
| Wrist and hand |  | Radius, Ulna, Carpals, Metacarpals, Phalanges | Supination, Pronation |
| Core/trunk | Rectus Abdominus, Latissimus dorsi | Regions of the vertebral column (cervical, thoracic, lumbar, sacral, coccyx) | Flexion, Extension, Rotation |
| 1.1.2 The stretch-shortening cycle, including the different types of contraction/muscular action: isotonic/eccentric, isotonic/concentric and isometric. Application of how movement or stability is produced as a result of these different contractions/muscular actions during physical activity and sporting movements. |
| 1.1.3 The concept of agonist, prime mover, antagonist, fixator, synergist and how a muscle can take on these different roles when providing stability or movement in a variety of physical or sporting situations. |
| 1.1.4 The components of an anatomical lever and how the body uses the lever systems (1st, 2nd and 3rd class) in physical activity and sport. This should include the mechanical advantages and disadvantages of each lever. |
| 1.1.5 Newton’s Three Laws of Motion and how they apply to sporting contexts: Law of Inertia, Law of Acceleration and Law of Action and Reaction. |
| 1.1.6 The principles related to the stability of the body in relation to the centre of mass and its implication in physical activities. |
| 1.1.7 The calculation of force and resultant force: a mass of 1 kg exerts a force of 9.81 N (down). |
| 1.1.8 How the muscular and skeletal systems respond, acutely, both structurally and functionally to the stress of warming up and immediate physical or sporting activity. |

**What went well – areas of strength**

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Unit Test Grade

**Self reflection**

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**Even better if – areas for development**

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