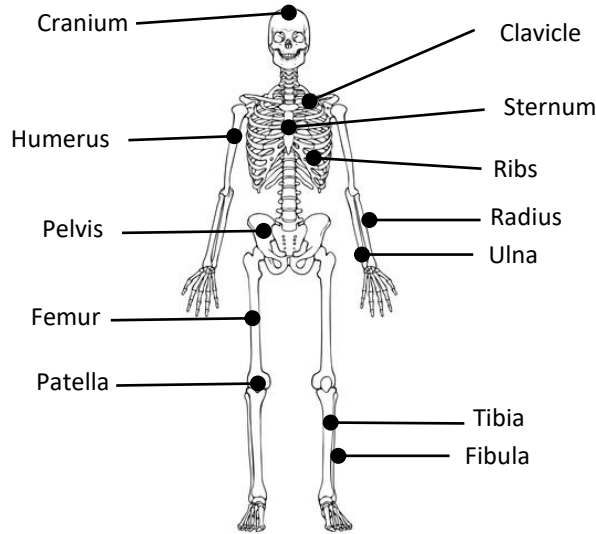
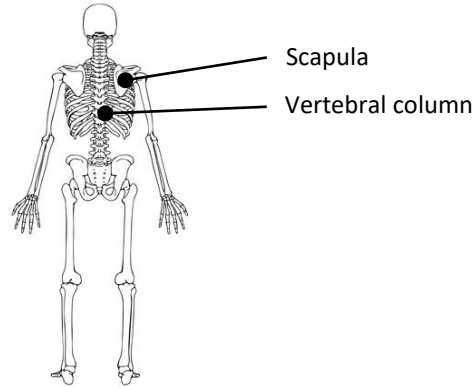


GCSE Physical Education – The structure and functions of the skeletal system

Structure of the skeletal system



Structure of the skeletal system

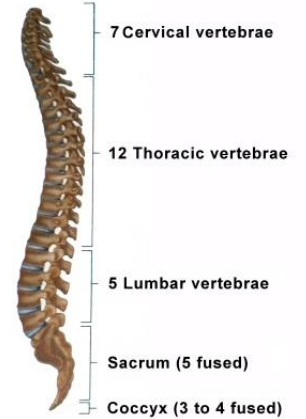


Vertebral Column

The vertebral column is divided into 5 sections. It is made up of irregularly shaped bones called vertebrae.

Each vertebra is protected with cartilage to prevent friction.

The vertebrae protect the spinal cord.

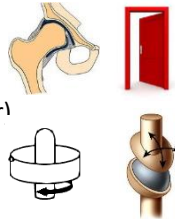


Function of the skeleton

- Protection of vital organs
- Muscle attachment
- Joints for movement
- Blood cell production (platelets, red and white)
- Storage of calcium and phosphorus

Classification of joint

- Pivot (neck – atlas and axis)
- Hinge (elbow and knee)
- Ball and socket (hip and shoulder)
- Condyloid (wrist)



Connective tissue

Ligaments – attaches bone to bone to add joint stability.

Tendons – attaches muscles to bone and contributes to joint movement as a result of muscle contraction.

Classification of bones

| Long (leverage) | Short (weight bearing) | Flat (protection + muscle attachment) | Irregular (protection and muscle attachment) |
|---|---|--|---|
| Clear shaft region to the bone. <i>i.e. femur, humerus & phalanges</i> | Light, small and very strong. <i>i.e. carpals, tarsals</i> | Broad surface area for muscle attachment. <i>i.e. cranium</i> | Assist the functioning of certain joints. <i>i.e. Patella/vertebrae</i> |

Joint movements

| Flexion | Adduction | Rotation | Dorsi-Flexion (ankle joint) |
|---|---|---|---|
| Decreasing the angle at a joint (bending) | Limbs moving towards the midline of the body. | A twisting/turning action around a joint. | When the toes are turned up to the body. |
| Increasing the angle at a joint (straightening) | Limbs moving away from the midline of the body. | A combination of flexion, extension, adduction & abduction. | When the toes are pointed away from the body. |