

The Musculoskeletal System

- The organ system that is made up of bones and skeletal muscle (voluntary)
- This system supports the body, protects delicate organs, and makes movement possible

Structural Features

- The skeleton contains three types of connective tissue:

- Bone
 - hard and dense
 - consist of bone cells within minerals (mainly calcium and phosphorus) and collagen fibres
- Ligaments
 - are strong tough elastic bands of connective tissue that can stretch
 - hold bones and movable joints together
 - surround the joint to give support and limit the joint's movement
- Cartilage
 - hard but slippery tissue that covers the ends of bones where they meet to form a joint.
 - helps reduce the friction of movement by allowing bones to glide over one another
 - absorbs the energy from the shock of physical movement



The Muscular System

- bones need muscles to move them
- there are about 600 muscles in the human body
- made up of bundles of long cells called muscle fibres that contain specialized proteins

How Muscles Make Bones Move

- proteins in muscle cause the muscle to contract when signalled by nerve cells
- each end of a skeletal muscle is connected by tendons to one or more bones in the skeleton
- when they contract, muscles get shorter and thicker
 - pulling motion
- this force moves one or both of the bones
- muscles can pull but not push
 - they always work in opposing pairs or groups

