



YMCA Awards

Level 3 Applied anatomy and
physiology

2018

Level 3 Applied anatomy and physiology

Musculoskeletal system

Learning outcomes

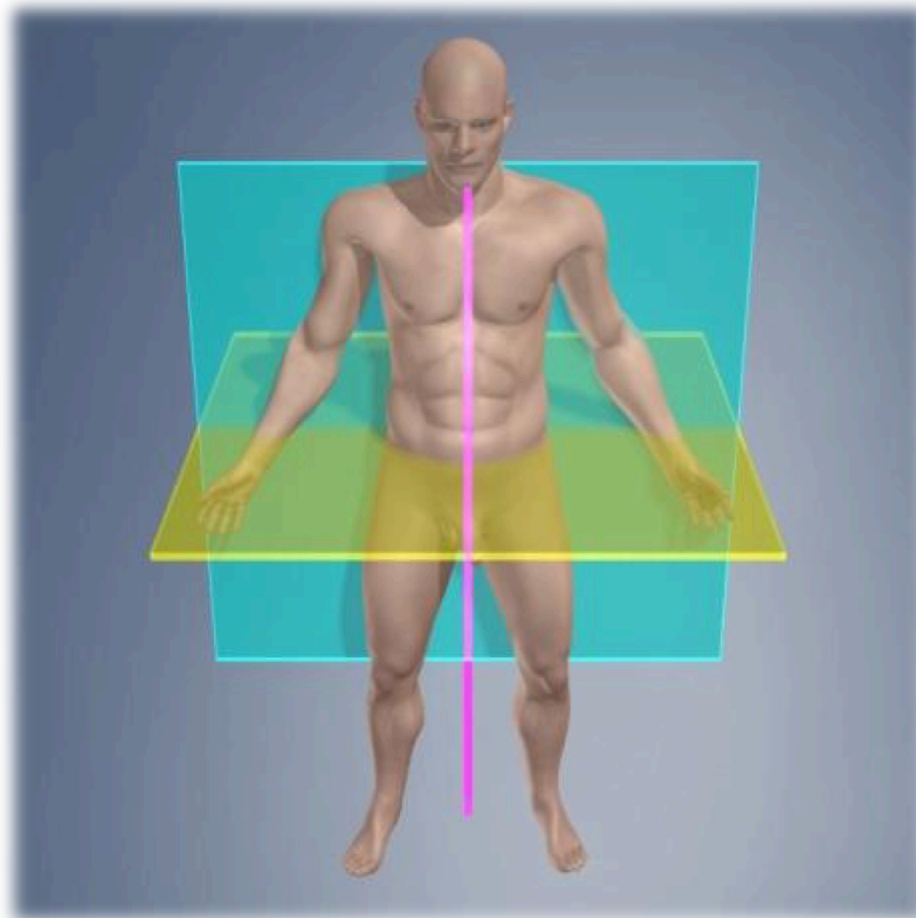
By the end of this session you will be able to:

- Identify the anatomical terms of location
- Recognise the anatomical planes of motion for joint actions and associated exercises
- Describe the classification of levers and their effect on joints/
joint action

Anatomical terms of location

- Medial and lateral
- Anterior and posterior
- Superior and inferior
- Proximal and distal
- Unilateral and bilateral
- Contralateral and ipsilateral

Anatomical planes



Frontal plane

- Divides the body into front and back sections (anterior and posterior)
- Joint action example
 - Abduction and adduction

Sagittal plane

- Divides the body into left and right sections (can be uneven)
- Joint action example
 - Flexion and extension

Transverse plane

- Divides the body into upper and lower parts
- Joint action example
 - Rotation

Classification of levers

- First class levers
- Second class levers
- Third class levers

First class levers

A first-class lever has the axis located between the weight (resistance) and the force

Second class levers

A second-class lever has the weight (resistance) located between the axis and the force

E.g. lower leg when someone stands with toes plantar flexed. The axis is formed by the metatarsophalangeal joints in the foot, the resistance is the weight of the body, and the force is applied to the calcaneus bone (heel) by the gastrocnemius and soleus muscles through the Achilles tendon

Third class levers

A third-class lever is the most common in the human body and is where force is applied between the resistance (weight) and the axis.

E.g. A biceps curl

