

GCSE (9-1)

Teacher Guide

PHYSICAL EDUCATION

J587

For first teaching in 2016

Biomechanics

Planes of movement and axes of rotation:

Definitions, alternative names and explanations

Version 2

Planes of movement and axes of rotation

Know the location of the planes of movement in the body and their application to physical activity and sport:

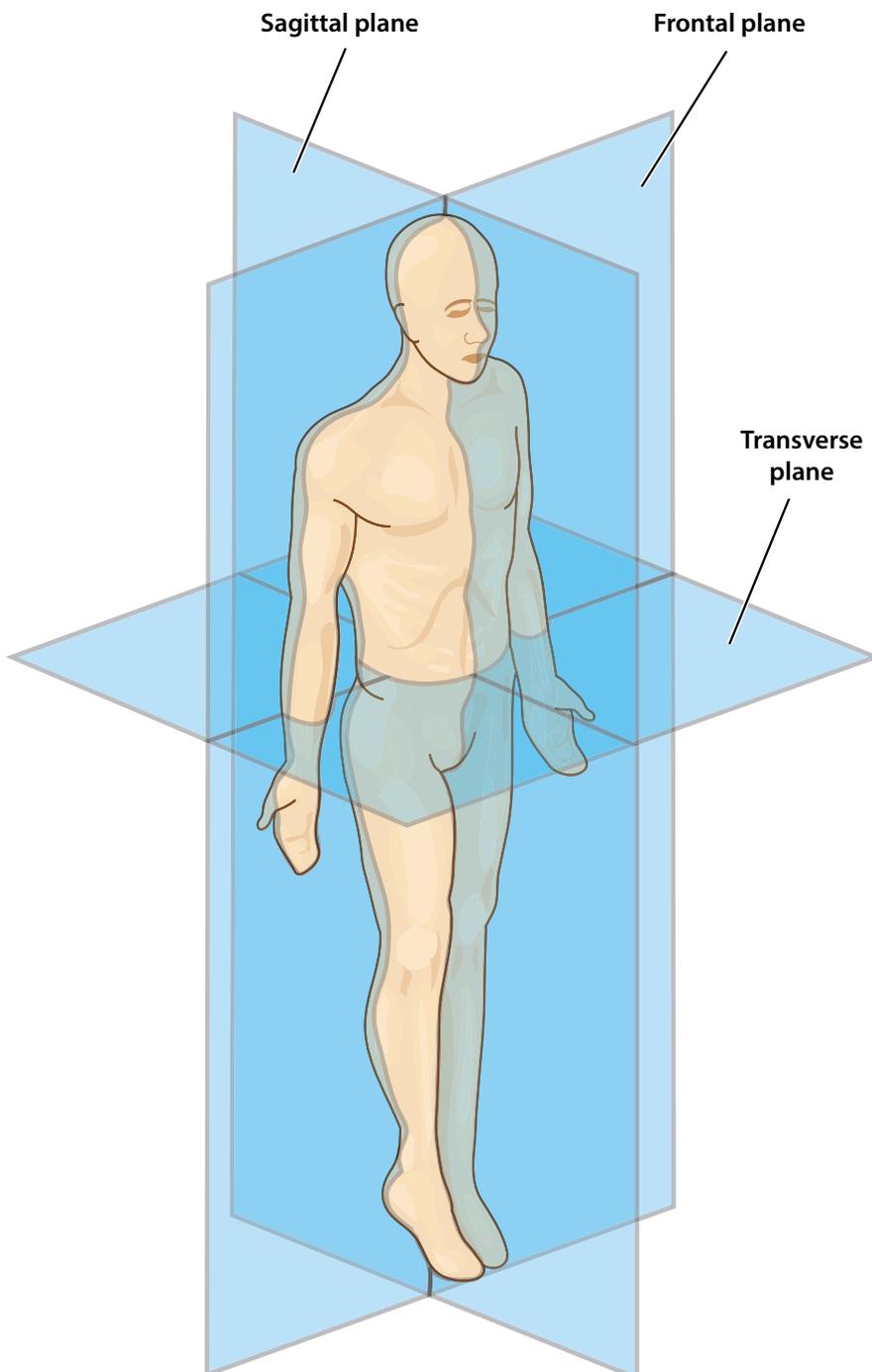
- frontal
- transverse
- sagittal.

Know the location of the axes of rotation in the body and their application to physical activity and sport:

- frontal
- transverse
- longitudinal.



Planes of movement



Frontal

The **frontal plane** (sometimes called the coronal plane) is perpendicular to the ground and divides the body into back (or posterior) and front (or anterior) portions. Movements in this plane are sideways movements, called abduction and adduction.

Transverse

The **transverse plane**, (also known as an axial plane or cross-section), divides the body into top and bottom. Movements in this plane are rotational in nature, such as internal and external rotation, pronation and supination.

Sagittal

The **sagittal plane** passes through the body front to back, so dividing it into left and right. Movements in this plane are the up and down movements of flexion and extension.

Axes of rotation

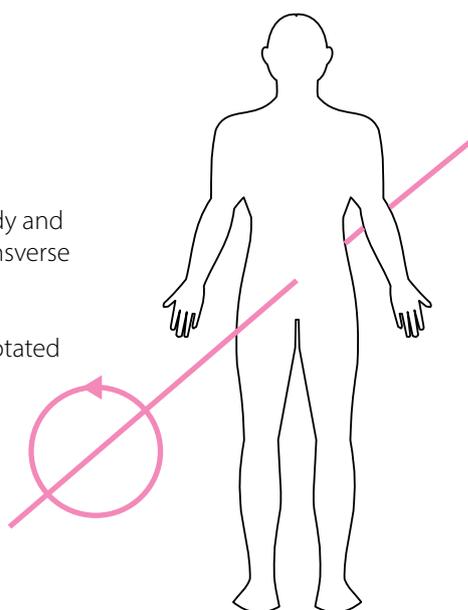
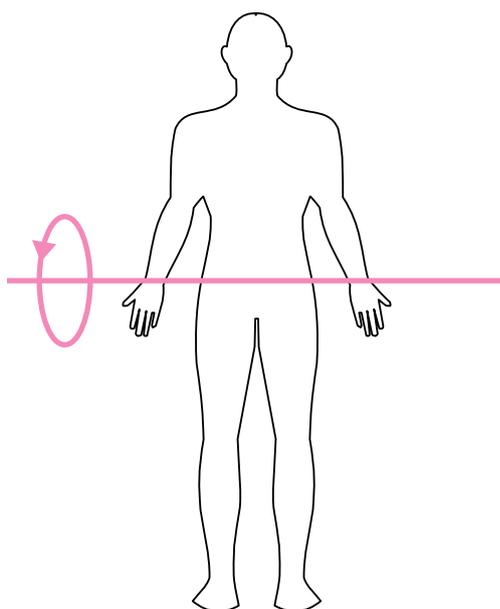
An axis is a straight line around which an object rotates. Movement at a joint takes place in a plane about an axis. There are three axes of rotation:

- frontal
- transverse
- longitudinal.

Frontal axis

Runs horizontally from the front to back of your body and is formed by the intersection of the sagittal and transverse planes. Often referred to as sagittal.

When a gymnast performs a cartwheel they have rotated around the frontal axis.



Transverse axis

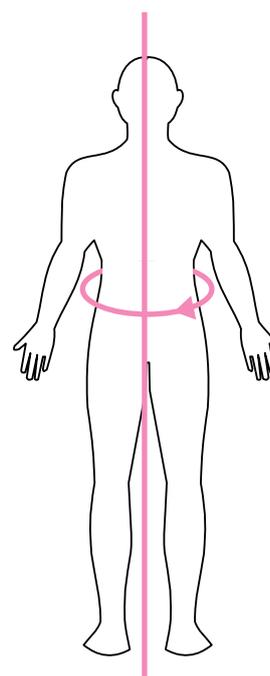
Passes horizontally from left to right and is formed by the intersection of the frontal and transverse planes. Sometimes referred to as frontal.

A somersault is a rotation through the transverse axis.

Longitudinal axis

Passes vertically from the top to the bottom of your body and is formed by the intersection of the sagittal and frontal planes.

When a gymnast performs a 360° turn, they are rotating around the longitudinal axis.





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