Planes and axes can be used when describing movement patterns. A plane is an imaginary line or surface that divides the body into two. Movement occurs in a plane. An axis is an imaginary line around or about which the whole body or part of the body can turn.

Planes and axes are both drawn through a body standing in the anatomical position (upright, with arms by the side of the body and palms facing forwards). All movements are then described from this starting point.

**Key terms**

- **Plane**: An imaginary line dividing the body into two.
- **Axis**: An imaginary line around which a body or body part can turn. ‘Axes’ is the plural of axis.

### 2.3 Planes and axes of movement applied to sporting actions

- **Frontal plane**: The frontal plane divides the body vertically from front to back. Movement occurs in the frontal plane about the sagittal axis. The **sagittal plane** divides the body vertically into left and right sides. Movement occurs in the sagittal plane about the frontal axis. The **transverse plane** divides the body horizontally from front to back. Movement occurs in the transverse plane about the vertical axis. The **vertical axis** passes vertically through the body, allowing rotation of the body in an upright position.

By looking at the diagrams and photographs together, we can see that:

- A cartwheel in gymnastics or dance takes place in the frontal plane, around the sagittal axis.
- A full twist jump in trampolining takes place in the transverse plane around the vertical axis.
- A somersault in gymnastics or diving (front/back and piked/tucked) takes place in the sagittal plane around the frontal axis.

**Activity**

6a) Make a model of a person standing in the anatomical position from Plasticine or Play-Doh. Use a pencil as an axis and two pieces of card as a plane. Push your pencil through your model and attach a piece of card to either side to represent the corresponding plane. If you spin your pencil, the model will rotate around that axis and in line with the plane.

b) Can you think of other sporting actions that take place in the planes and around the axes described on these two pages? They can be whole body movements or movements that involve only part of the body.

c) Use your model to make a video presentation explaining planes and axes, using the examples you came up with for part b.

**Study tip**

A wheel on a bike spins around a central axel. This is how an axis works. If you had an axis through your belly button, you’d spin like a wheel.

Think of a plane as a thick sheet of glass that you’re trapped tightly inside. Movements that take place in that plane can only occur in the direction that the sheet of glass allows.