

Superior: above

Inferior: below

Ipsilateral: Same side

Contralateral: Opposite Side

Horizontal: Shows brain structures as seen from the side

Sagittal: Shows brain structures as seen from the side

Coronal: Shows brain structures as seen from the front

Specialized Parts

Gray matter: cell bodies & dendrites

White matter: axons, mostly myelinated

Tract/Projection: Set of axons in the CNS

Nerve: Set of axons in the PNS

Nucleus: cluster of neuron cell bodies within CNS

Ganglion: cluster of neuron cell bodies in the PNS

Gyrus (plural: gyri): Bumpy parts of brain (mounds).

Sulcus (plural: sulci): Grooves that separate the gyri.

Fissure: Long, deep sulcus

Brain Structures

3 major divisions: Hindbrain, Midbrain, Forebrain.

Hindbrain: consist of the medulla, pons, and cerebellum.

Located at the posterior portion of the brain.

Medulla: Located above the spinal cord. Responsible for vital reflexes such as breathing, heart rate, vomiting, salivation, coughing and sneezing.

Cranial Nerves: Allow the medulla to control sensations from the head, muscle movements in the head, and many parasympathetic outputs to the organs.

Pons: Lies on each side of the medulla (ventral and anterior). Along with the medulla, it contains the **reticular formation** and **raphe system**, which work together to increase arousal and readiness of other parts of the brain.

Cerebellum: Located posterior to the brainstem with many deep folds. Helps regulate motor movement, balance, and coordination. Also important for shifting attention between auditory and visual stimuli.

Midbrain: Comprised of the following structures:

-**Superior Colliculus:** Helps process visual info.

-**Inferior Colliculus:** Helps process auditory info.

-**Substantia Nigra:** Involved in movement.

Brain stem: consists of the medulla, pons, midbrain, some forebrain structures.

Forebrain: most prominent part of the brain, consisting of the outer cortex (cerebral cortex) and subcortical regions.

Limbic System: Associated with motivation, emotion, drives and aggression, and includes: olfactory bulb, hypothalamus, hippocampus, and amygdala.

Olfactory bulbs: Send info about smell to cortex