

## Lobes of the Brain

### Frontal Lobe

- separated from parietal lobe via central sulcus
- contains precentral, superior, middle, and inferior gyri

### Temporal Lobe

- superior, middle, inferior gyri
- separated from frontal/parietal lobes via sylvian (lateral) fissure

### Parietal Lobe

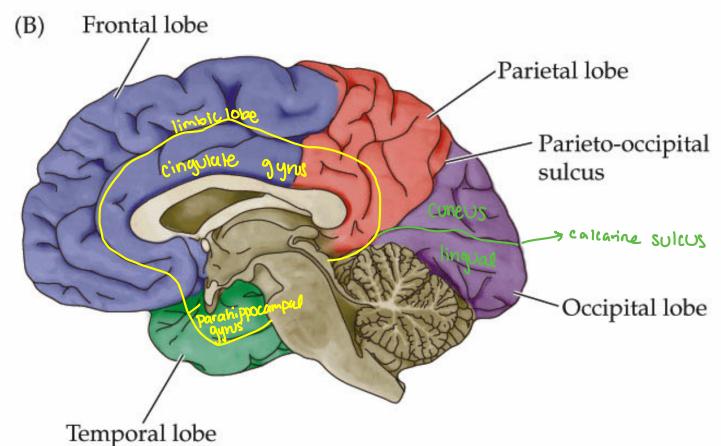
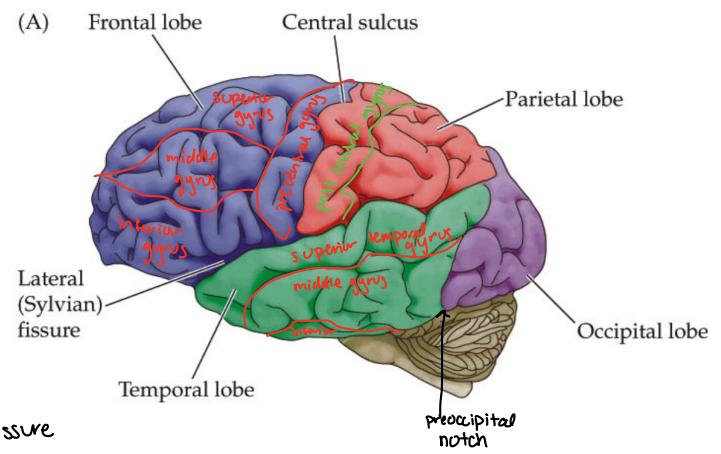
- contains post central gyrus
- separated from occipital lobe via parieto-occipital sulcus  
(only on medial surface of brain)

### Occipital Lobe

- calcarine sulcus (separates cuneus and lingual gyrus)
- cuneus + lingual gyrus

### Limbic Lobe of Broca

- cingulate + parahippocampal gyrus



## The insula

Other names - insular lobe, insular cortex, insula gyrus

- on surface of the brain, but folds under the frontal/temporal lobe during development

## Functional Areas of Cerebral Cortex

### History

- Phrenology - Franz-Joseph Gall made predictions about complex personality traits based on bumps in the skull
- Cerebral Cortex Anatomical Areas
  - Brodmann anatomically defined regions of cerebral cortex (52 Brodmann's areas)
  - BA 44 and 45 — functional area name is Broca's Area

### Electrical Stimulation of Brain

- Gustav Fritsch + Edward Hitzig → showed that there was a motor strip (1870)
- Wilder Penfield (1930-1960) → showed motor homunculus

## Primary Functional Areas of Cortex

- Primary Motor Cortex (M1 - BA4) → part of precentral gyrus / motor homunculus

- Primary Somatosensory Cortex (S1 - BA 1, 2, 3) → part of postcentral gyrus and somatosensory homunculus
- Primary visual cortex (V1, BA 17) → cuneate/lingual gyri near calcarine fissure. Contains visual receptive fields
- Primary Auditory Cortex (A1 - BA 21, 22) → superior temporal gyrus and auditory receptive fields