

Cognitive Studies:

Functioning of the Mind

Where is the Mind located ?

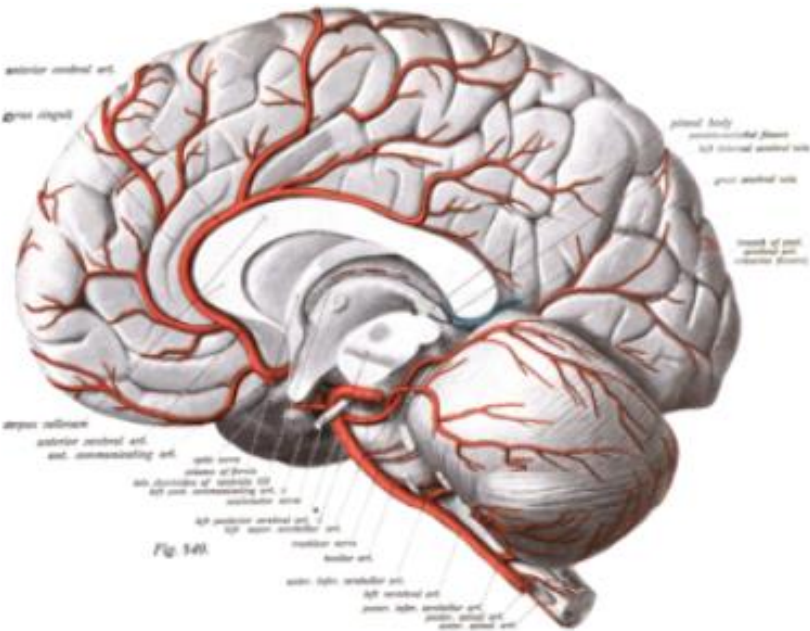
(Contd.)

Cerebral Functions

(Contd.)

Brain's Blood Supply: Cerebral Stroke

Gyrus Areas of Brain & Vascular Supply

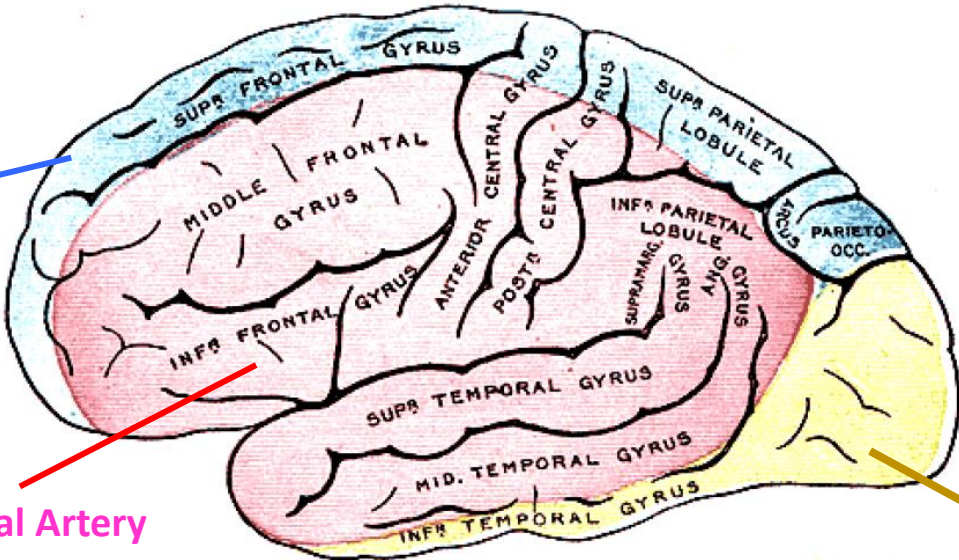


Lateral View

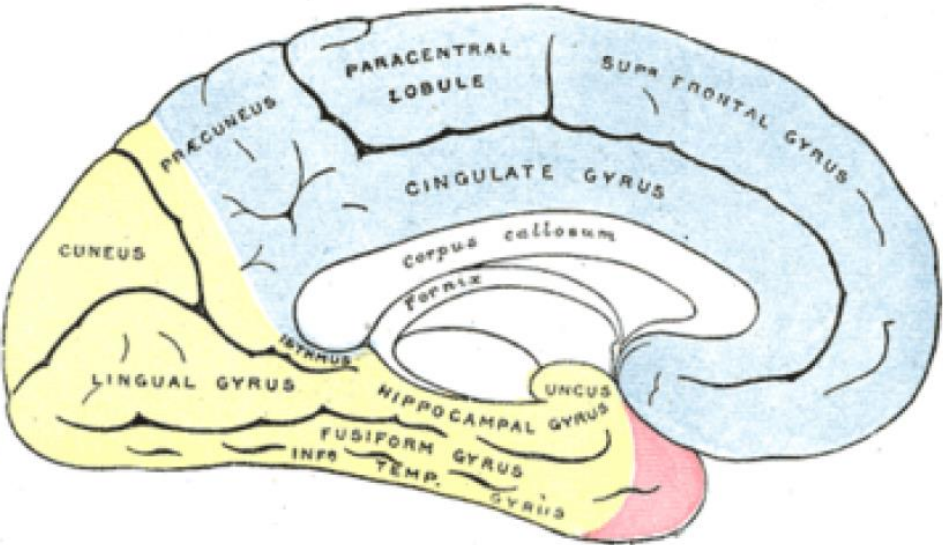
Anterior Cerebral Artery

Middle Cerebral Artery

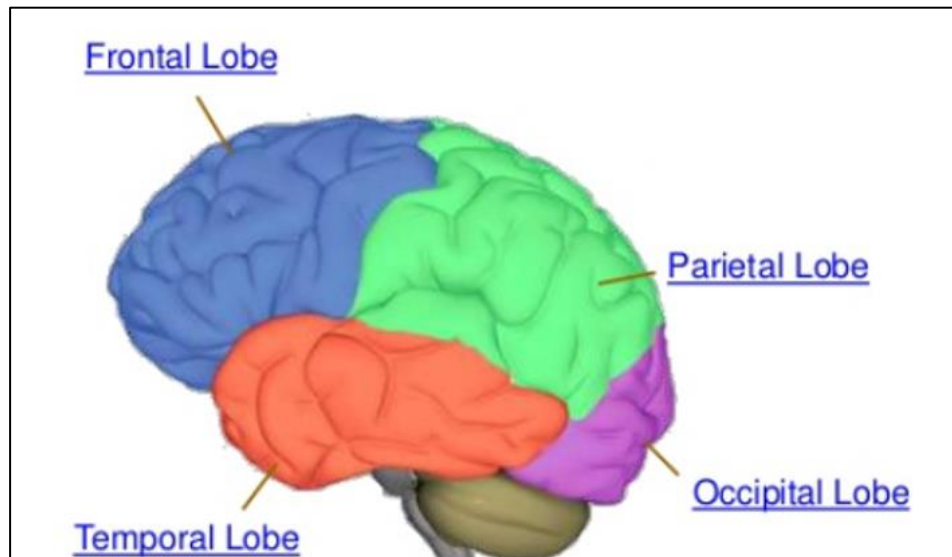
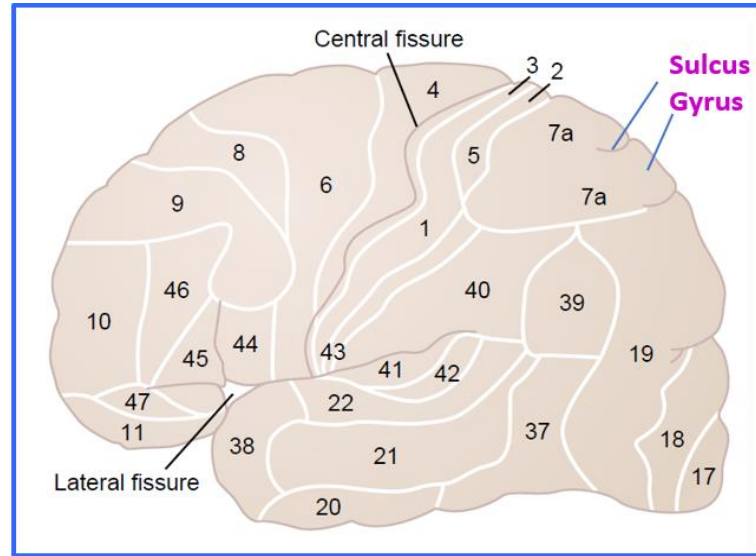
Posterior Cerebral Artery



Medial View

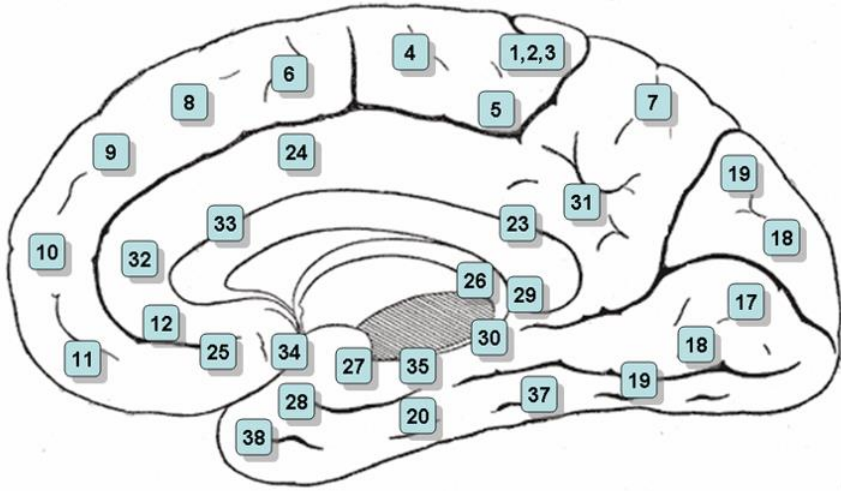


Brodmann's Areas: Lateral Surface



- Areas 3, 1 and 2 – Primary somatosensory cortex in the postcentral gyrus
- Area 4– Primary motor cortex
- Area 5 – Superior parietal lobule
- Area 6 – Premotor cortex and Supplementary Motor Cortex (Secondary M)
- Area 7 – Visuo-Motor Coordination
- Area 8 – Includes Frontal eye fields
- Area 9 – Dorsolateral prefrontal cortex
- Area 10 – Anterior prefrontal cortex (most rostral part of superior and middle frontal gyri)
- Area 11 – Orbitofrontal area (orbital and rectus gyri, plus part of the rostral frontal gyrus)
- Area 12 – Orbitofrontal area (used to be part of BA11, refers to the area below BA11)
- Area 13 and Area 14* – Insular cortex
- Area 15* – Anterior Temporal lobe
- Area 16 – Insular cortex
- Area 17 – Primary visual cortex (V1)
- Area 18 – Secondary visual cortex (V2)
- Area 19 – Associative visual cortex (V3, V4, V5)
- Area 20 – Inferior temporal gyrus
- Area 21 – Middle temporal gyrus
- Area 22 – Part of the superior temporal gyrus, included in Wernicke's area
- Area 23 – Ventral posterior cingulate cortex
- Area 24 – Ventral anterior cingulate cortex.
- Area 25 – Subgenual area (part of the Ventromedial prefrontal cortex)^[5]

Brodmann's Areas: Medial Surface



Limbic Lobe

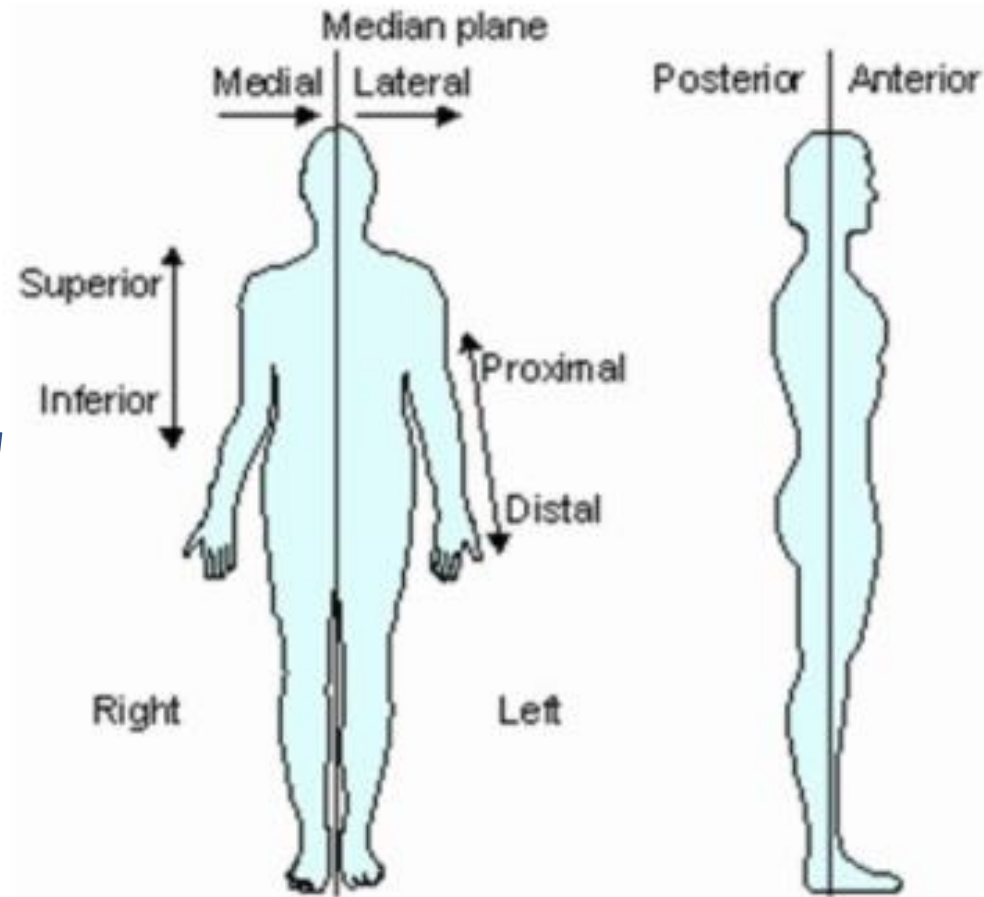
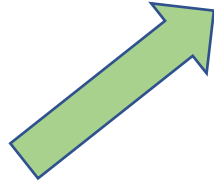


- Area 26 – Ectosplenial portion of the retrosplenial region of the cerebral cortex
- Area 27 – Piriform cortex
- Area 28 – Ventral entorhinal cortex
- Area 29 – Retrosplenial cortex
- Area 30 – Subdivision of retrosplenial cortex
- Area 31 – Dorsal Posterior cingulate cortex
- Area 32 – Dorsal anterior cingulate cortex
- Area 33 – Part of anterior cingulate cortex
- Area 34 – Dorsal entorhinal cortex (on the Parahippocampal gyrus)
- Area 35 – Part of the perirhinal cortex (in the rhinal sulcus)
- Area 36 – Part of the perirhinal cortex (in the rhinal sulcus)
- Area 37 – Fusiform gyrus
- Area 38 – Temporopolar area (most rostral part of the superior and middle temp)
- Area 39 – Angular gyrus, considered by some to be part of Wernicke's area
- Area 40 – Supramarginal gyrus considered by some to be part of Wernicke's area
- Areas 41 and 42 – Auditory cortex
- Area 43 – Primary gustatory cortex
- Areas 44 and 45 – Broca's area, includes the opercular part and triangular part
- Area 46 – Dorsolateral prefrontal cortex
- Area 47 – Orbital part of inferior frontal gyrus
- Area 48 – Retrosubicular area (a small part of the medial surface of the temporal lobe)
- Area 49 – Parasubicular area in a rodent
- Area 52 – Parainsular area (at the junction of the temporal lobe and the insula)

Brain's Undersurface (Inferior Surface)

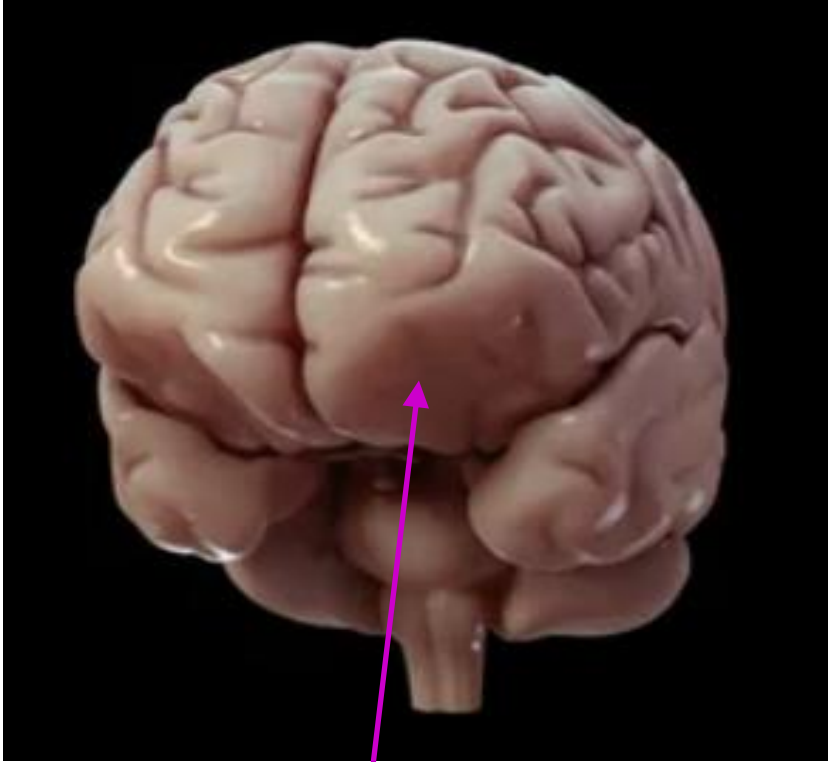
Relationship of Positions

- Anterior/Posterior
- Dorsal/Ventral
- Medial/Lateral
- Superior/Inferior

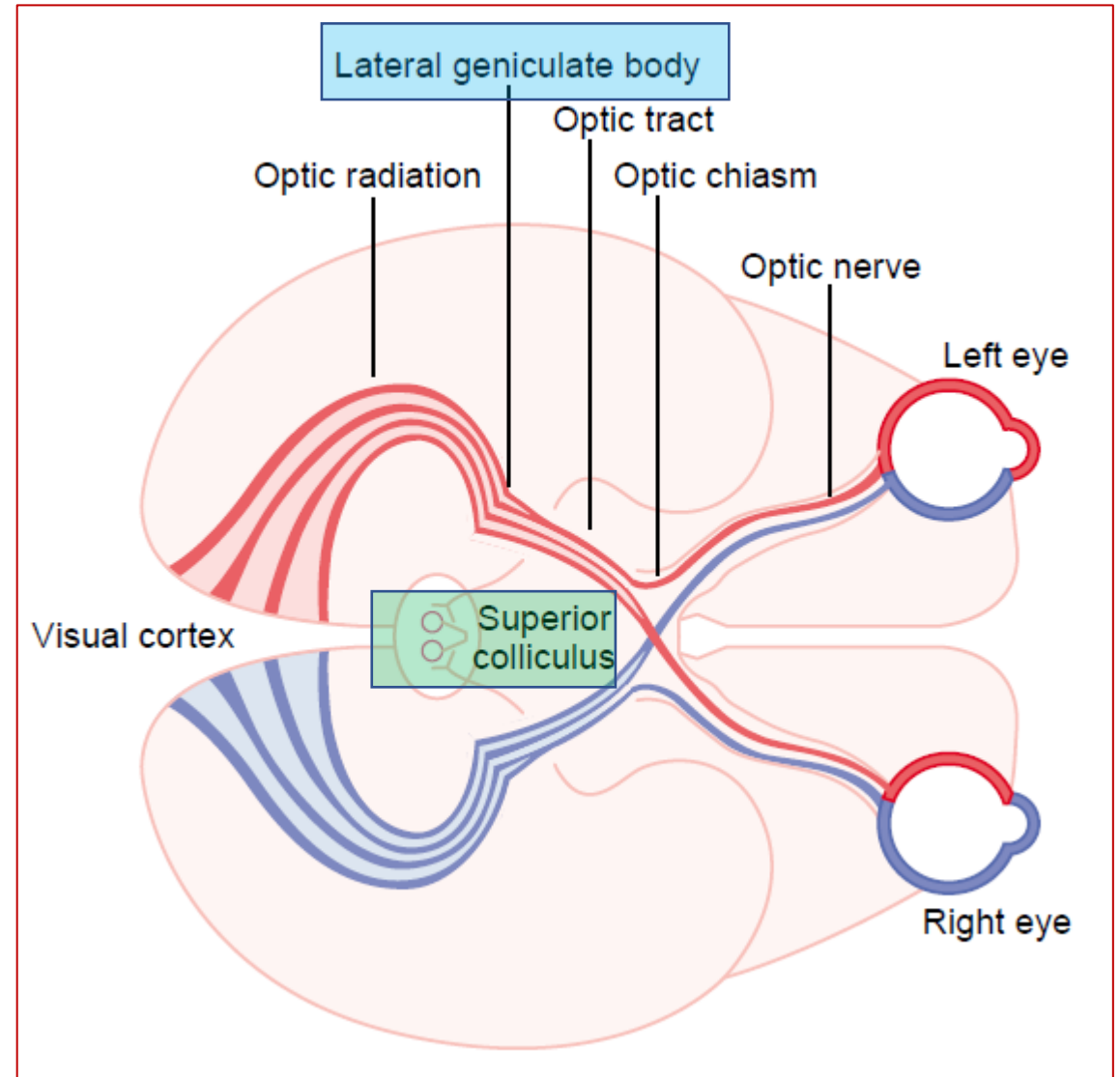


Recap.

Principal visual pathways from the eyes to the visual cortex.



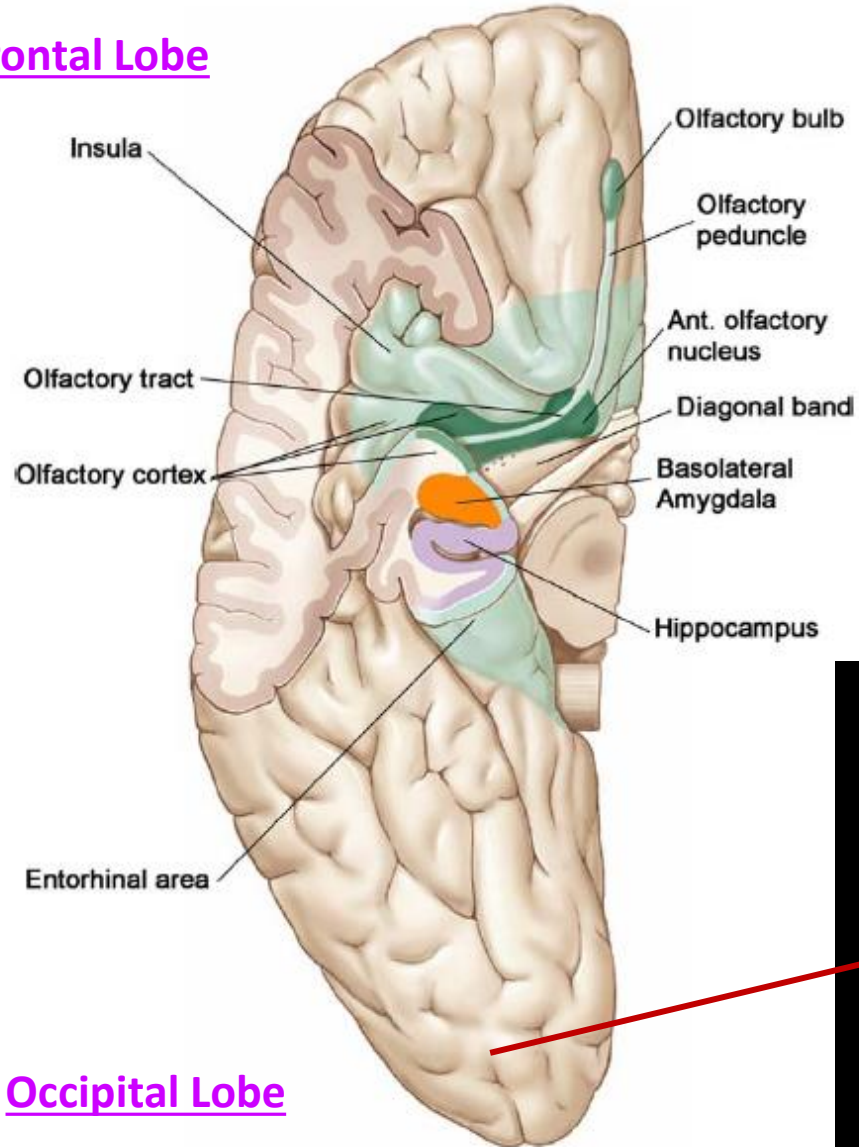
Brain's Undersurface



Brain's Underside:

Limbic, Frontal, Occipital, Temporal Lobes

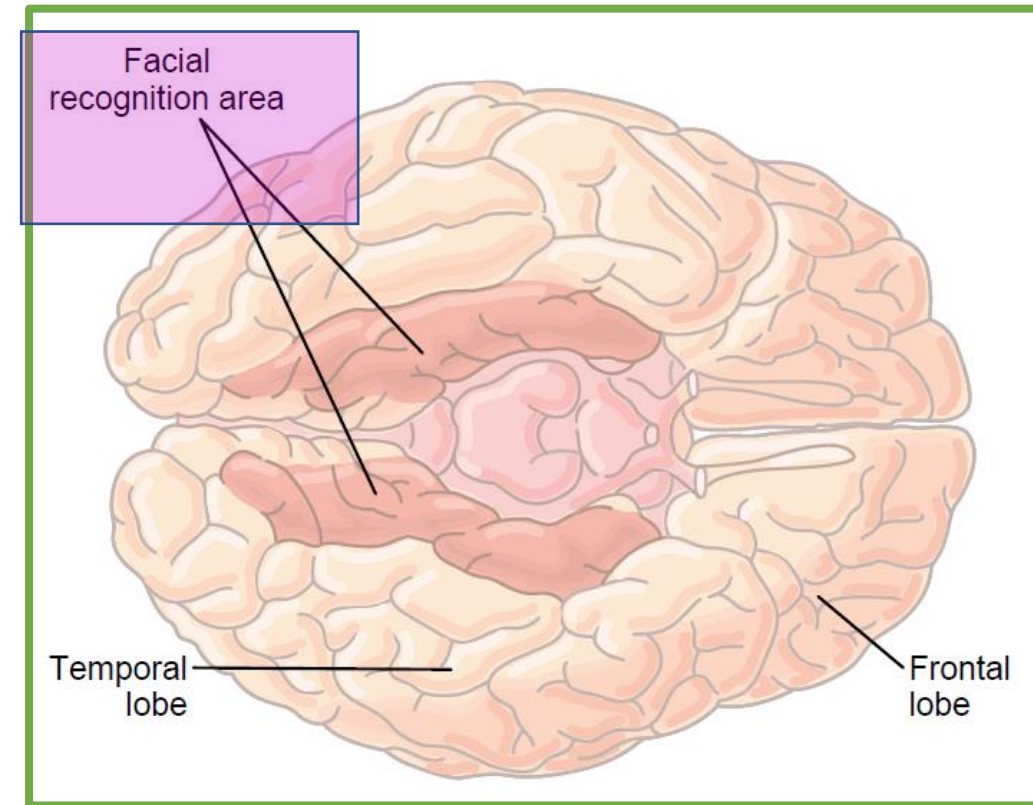
Frontal Lobe



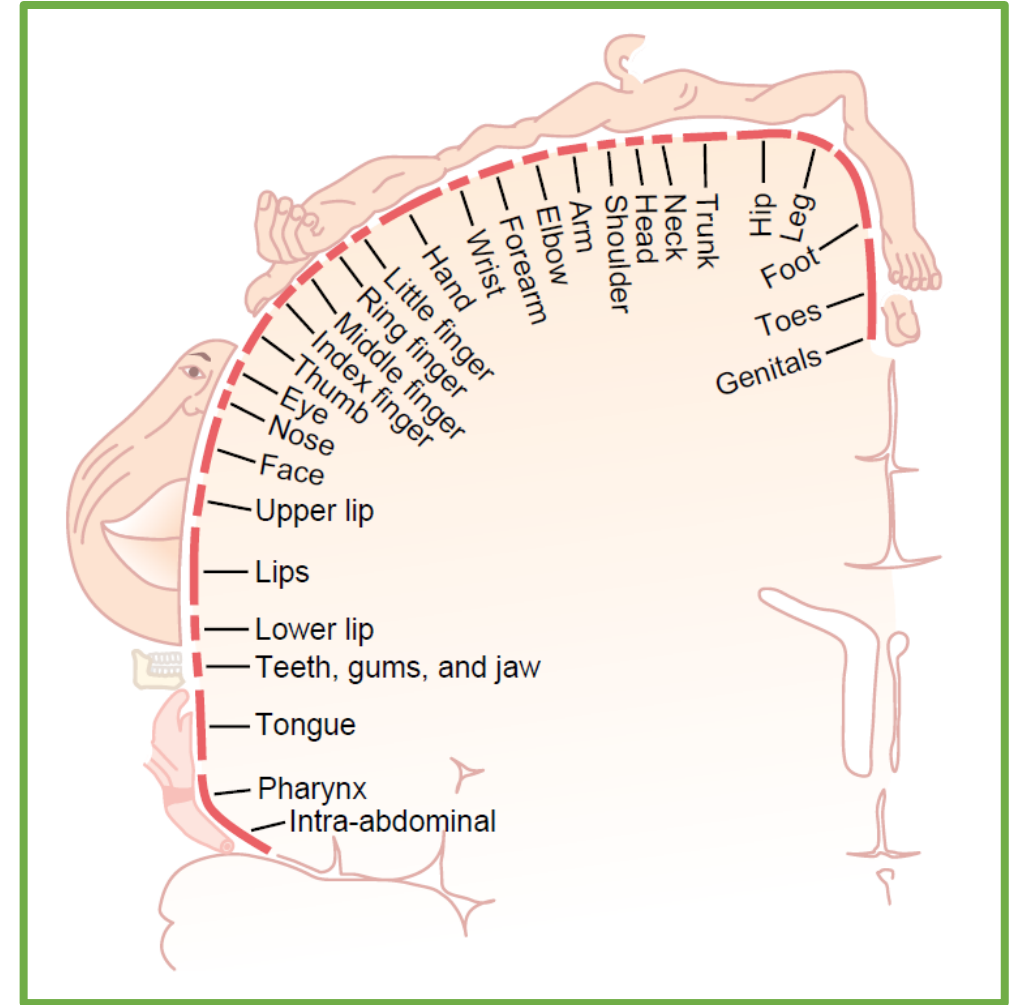
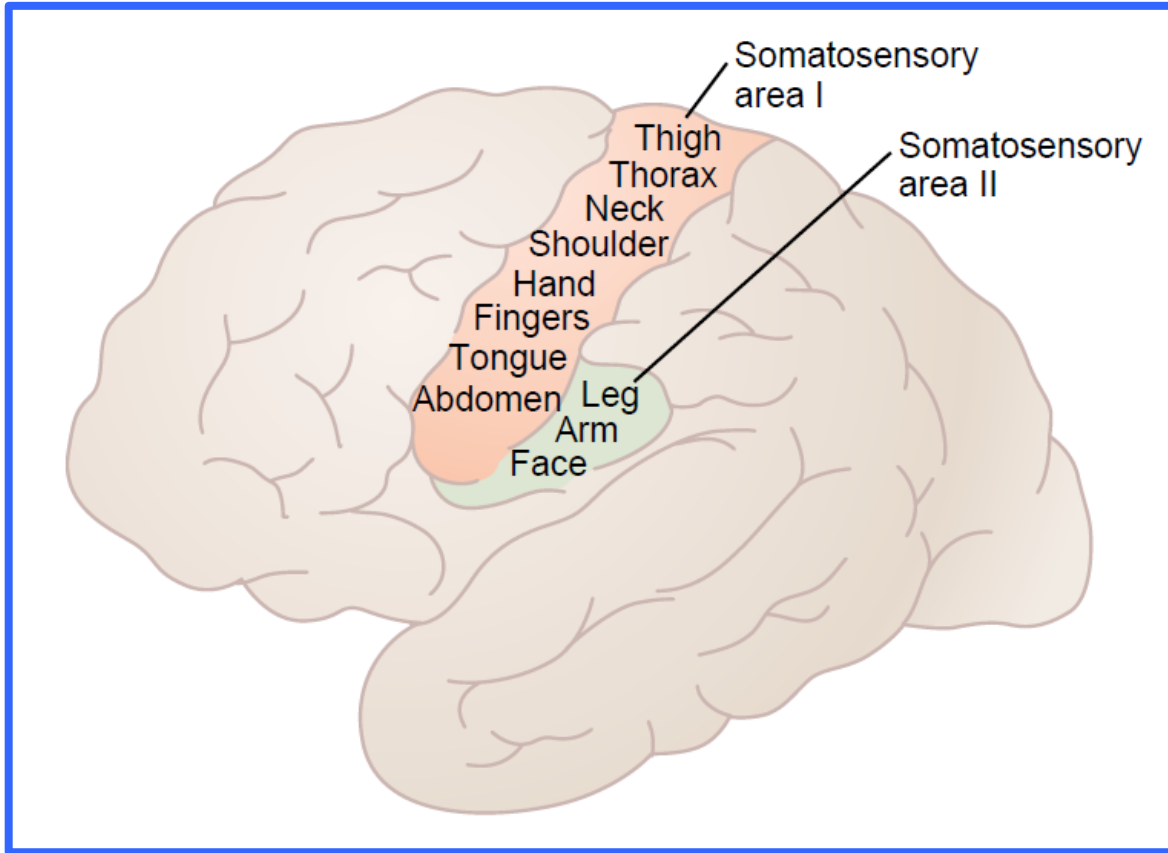
Occipital Lobe

Ventral Surface:

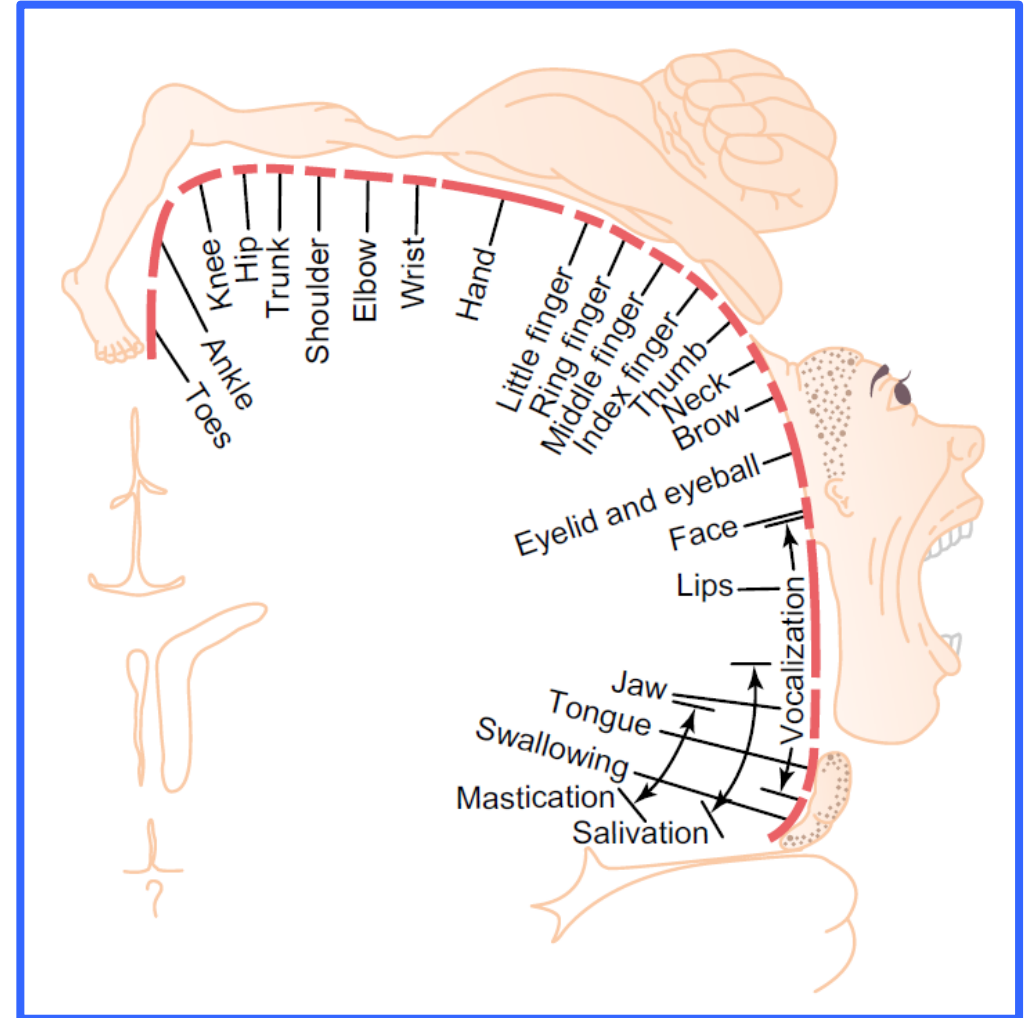
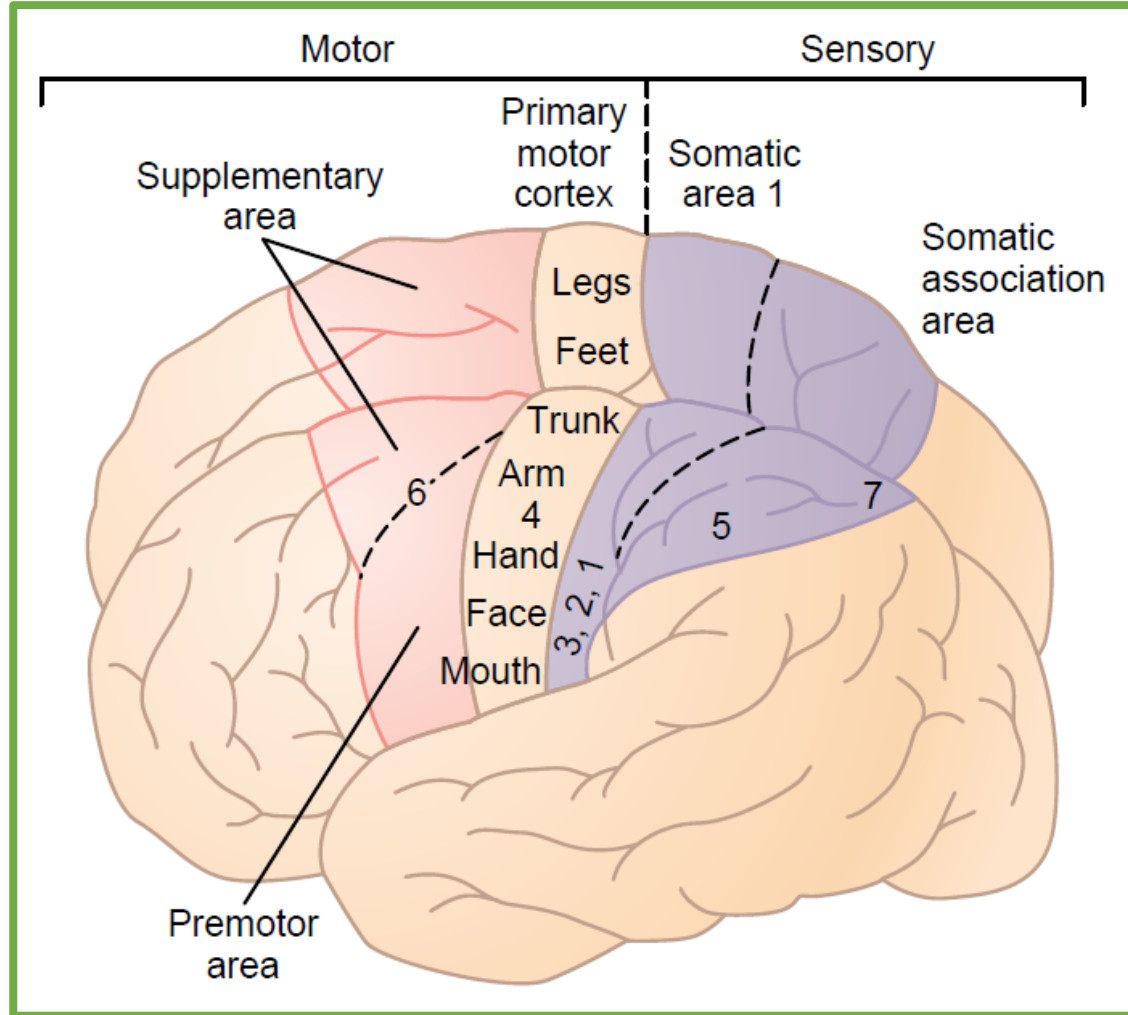
Person/Face recognition areas (Fusiform Gyrus)



Sensory Homunculus

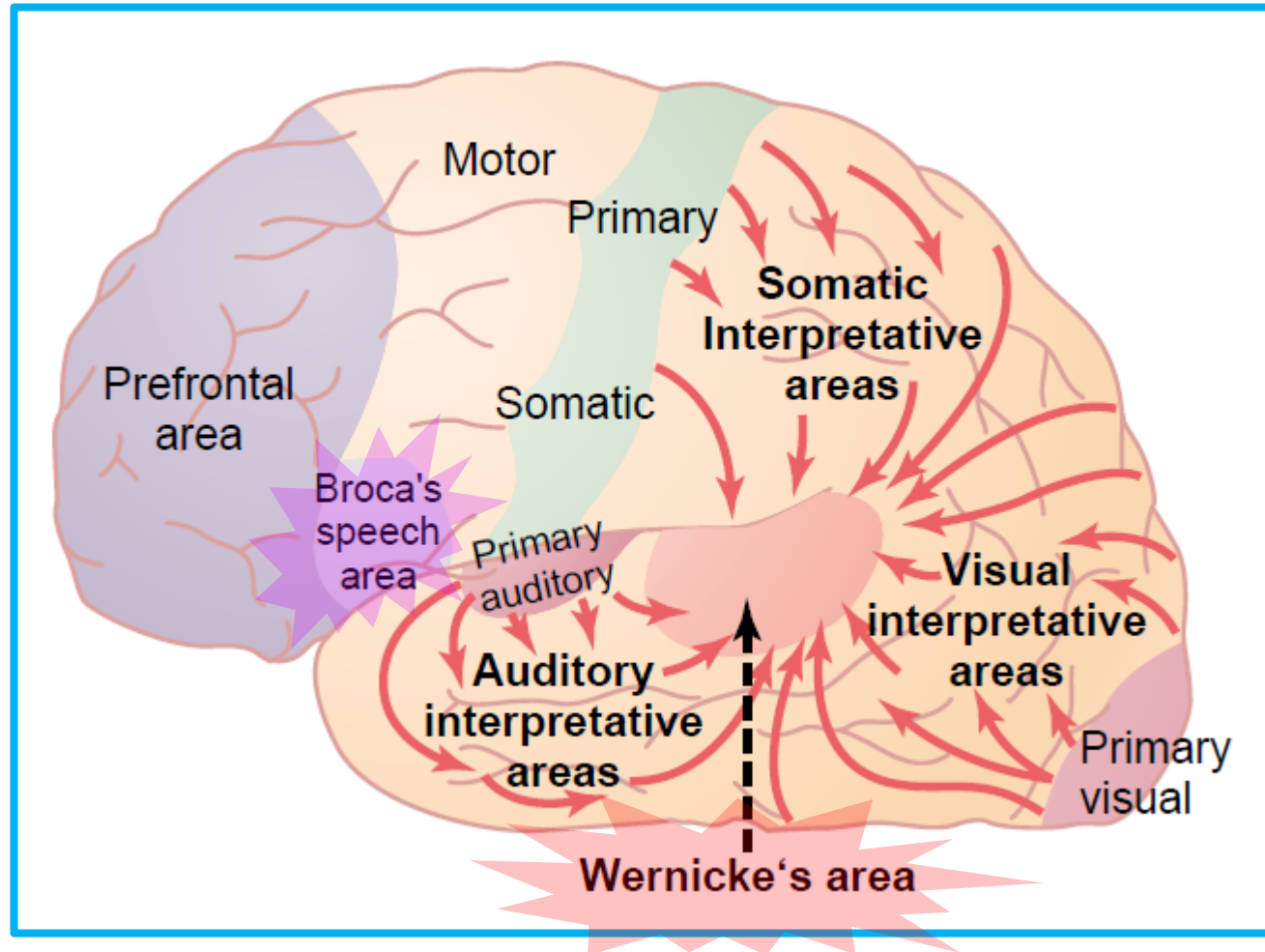


Motor Homunculus

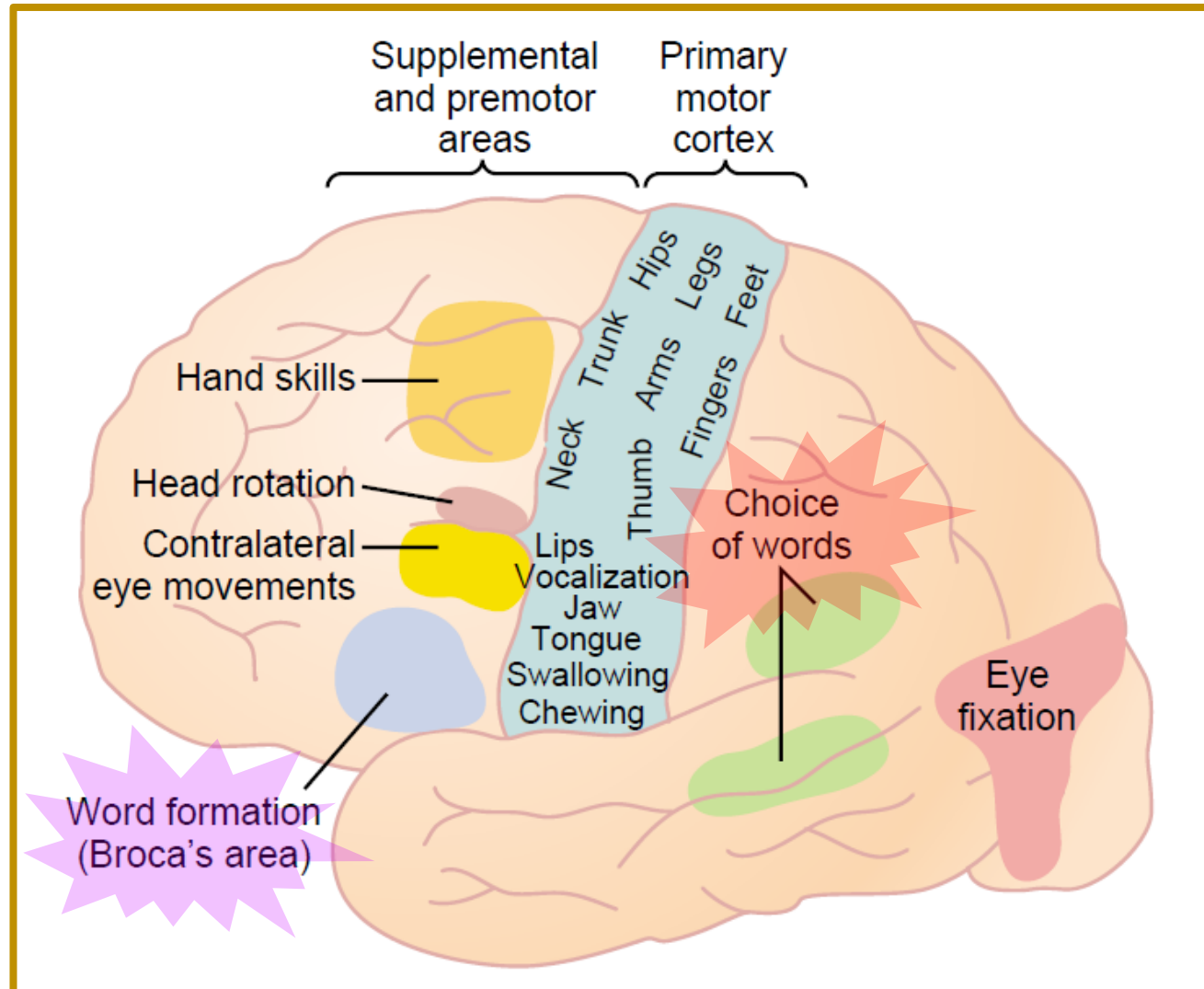


Wernicke's Area: For Comprehension

Interpreter & Synthesizer of Auditory, Visual & Somatic Association Areas



Representation of body muscles in Motor cortex



Pathways for Hearing, Speaking & Reading: Literacy & Education

