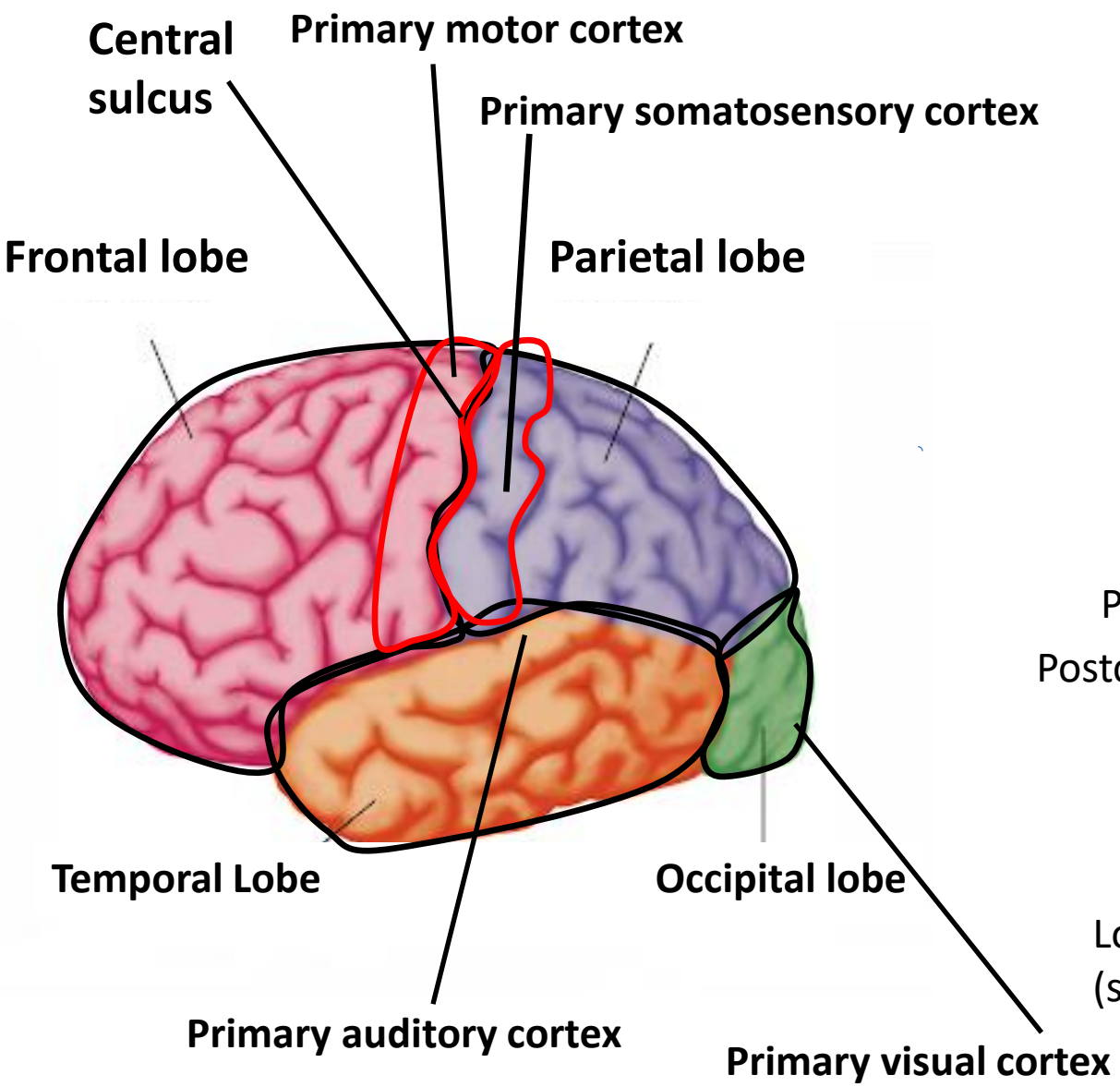
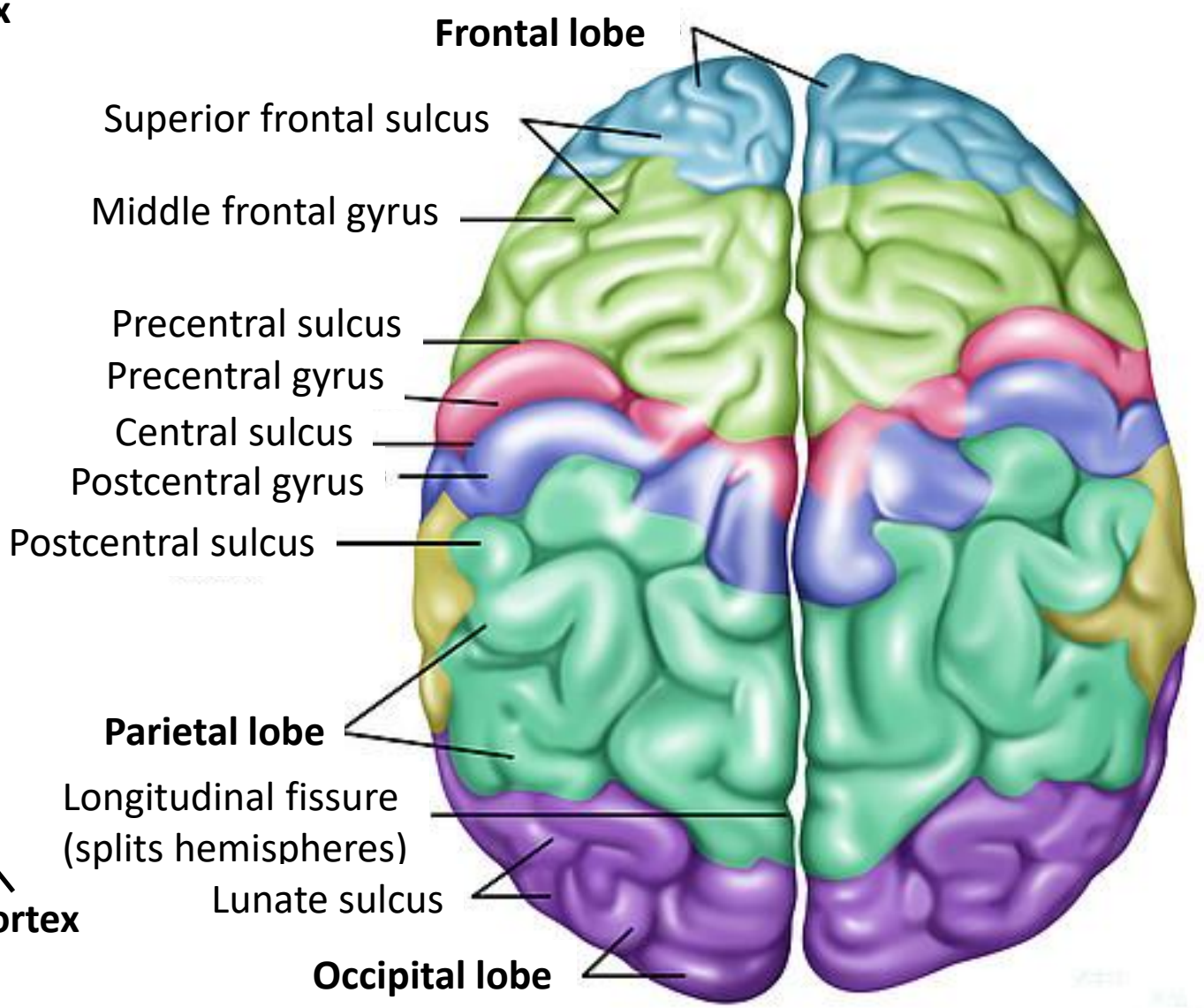
# The Main Lobes

Conrad.Perry@Adelaide.edu.au


Central sulcus
Primary motor cortex
Primary somatosensory cortex
Frontal lobe
Parietal lobe
Temporal Lobe
Occipital lobe
Primary auditory cortex
Primary visual cortex


Frontal lobe
Superior frontal sulcus
Middle frontal gyrus
Precentral sulcus
Precentral gyrus
Central sulcus
Postcentral gyrus
Postcentral sulcus
Parietal lobe
Longitudinal fissure
(splits hemispheres)
Lunate sulcus
Occipital lobe

# Primary vs. association cortex

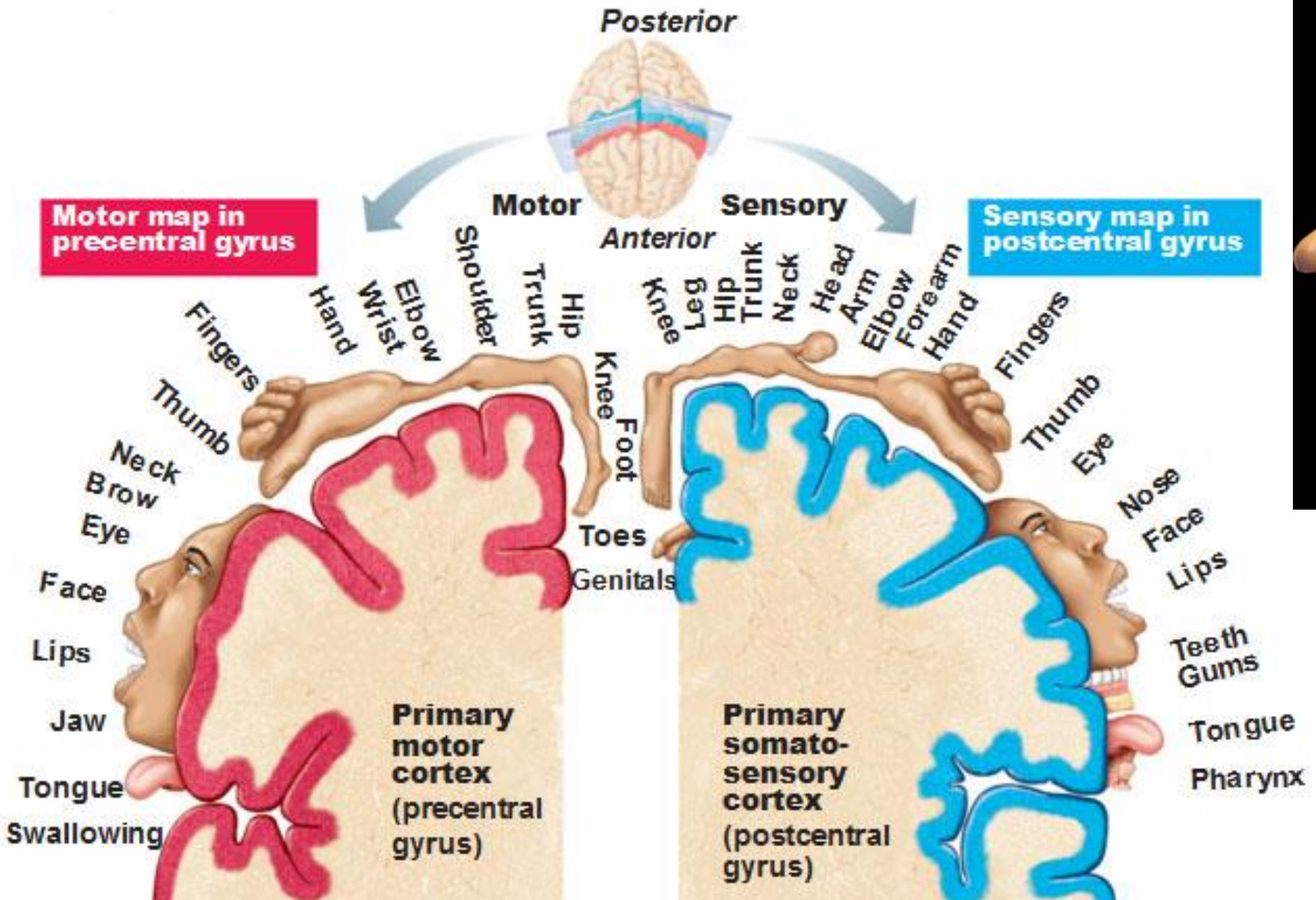
‘Primary’ is used to descript parts of the brain that process raw sensory information

- the motor cortex is an exception

‘Association cortex’ is everything else

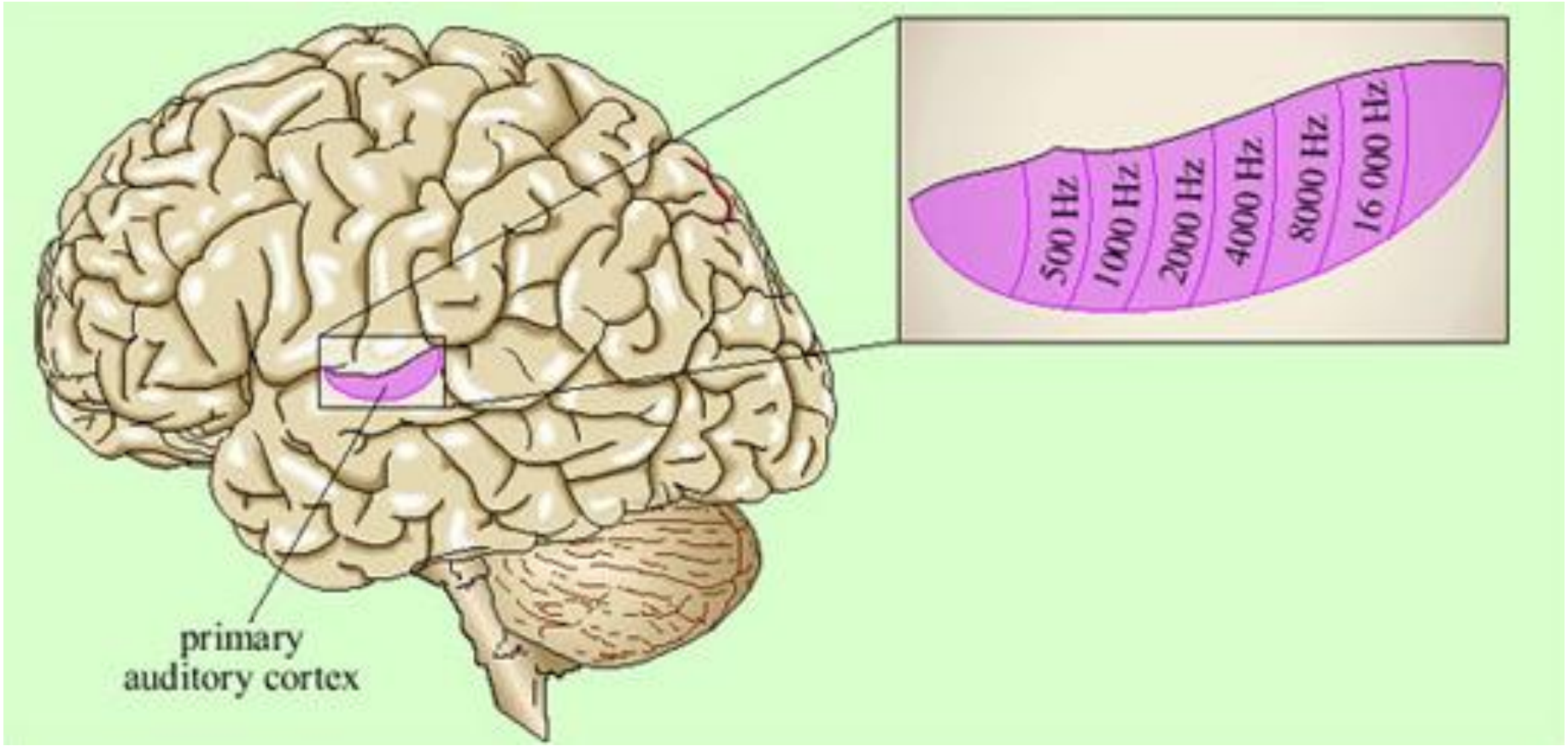
One of the big differences when comparing humans to other species is that humans have a far greater proportion of association compared to primary cortex.

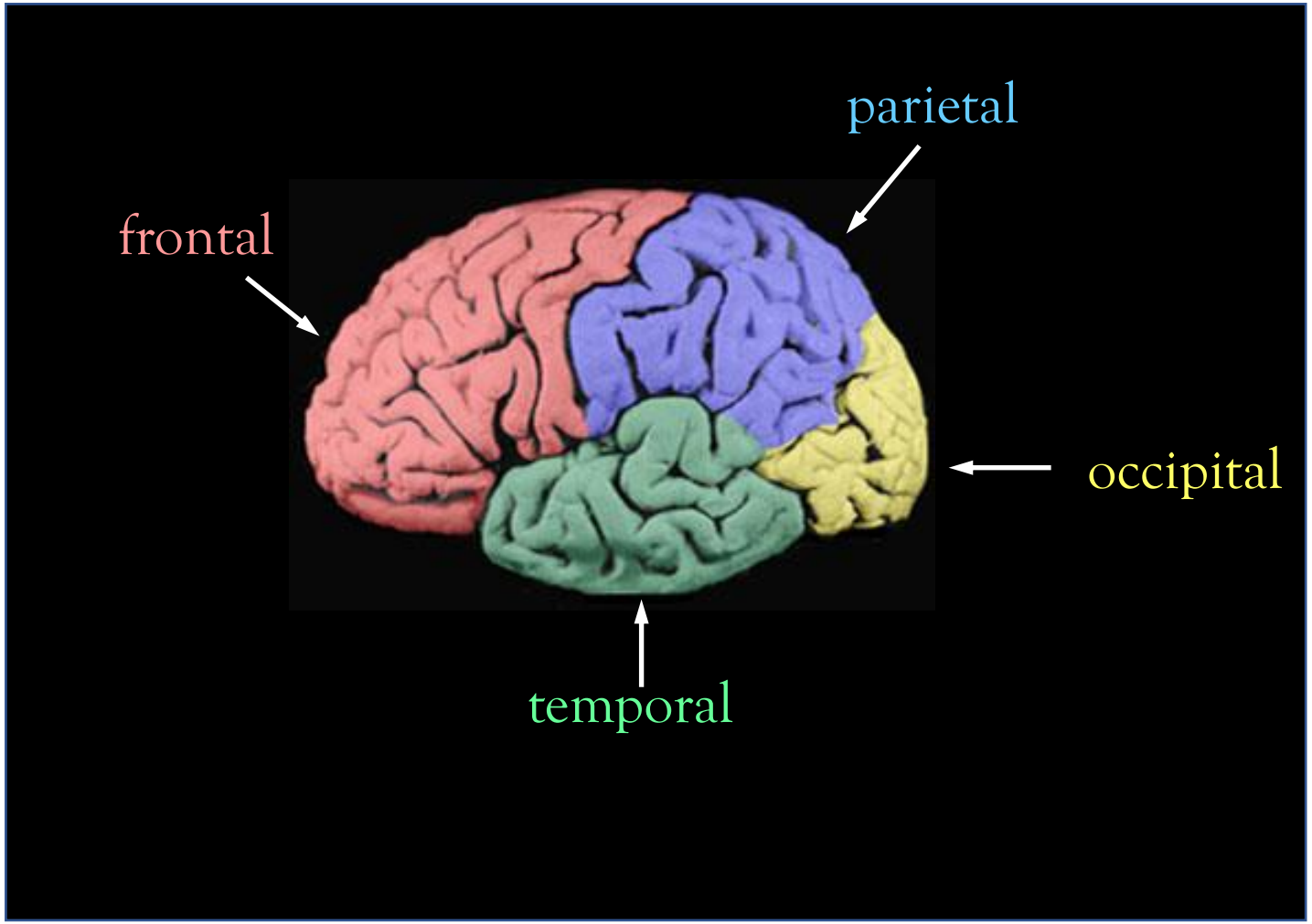
# Motor and Sensory cortex




# Organisation of primary auditory cortex

Uses a tonotopic organisation




parietal
frontal
occipital
temporal

# Occipital lobe

Responsible for visual processing

There are arguments about how separate different types of processing are but they certainly include:

- Motion
- Form features (i.e., the shape)
- Colour
- Depth feature

Cortical deficits can be found with all of these

# Parietal lobe

Somatosensory processing (sensation and perception)

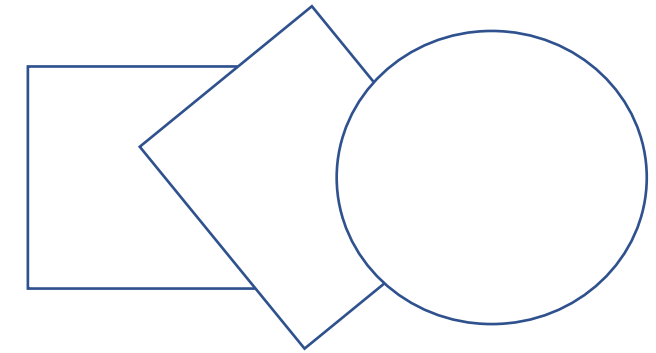
Integrating sensory input from the visual system

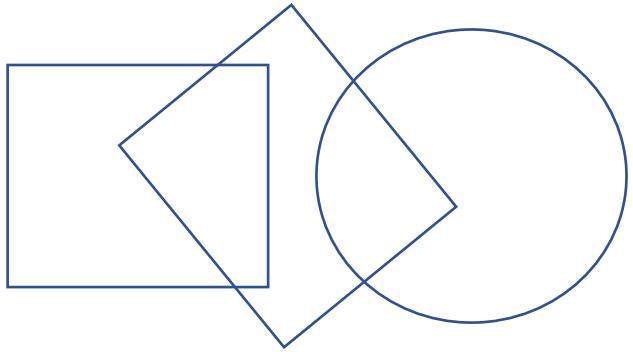
Spatial coordinates

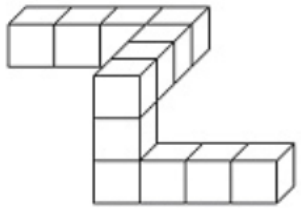
- Representing the world

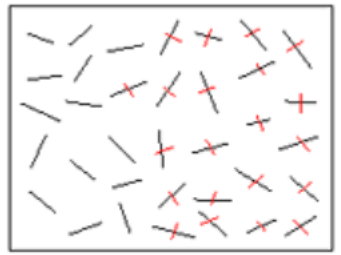
and space in general (e.g., mental rotation)

Attention









# Temporal lobe

Hearing

Semantics

Faces and words

Language (spoken ‘aphasia’ and written ‘dyslexia’)

Memory

# Frontal lobe

Primary area: motor

Association Areas: Abstract thinking, planning, social skills

Attention (top-down)