



## Lobes of the Brain

The brain's neocortex has four major divisions known as "lobes". These include the frontal lobe, parietal lobe, temporal lobe, and occipital lobe. Each lobe is involved in specific brain functions essential in thinking, behavior, sensation and emotions.

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### The Frontal Lobe

The frontal lobe is associated with behavior execution and abstract planning. This region is further divided into cortical areas. One is the prefrontal cortex, which is essential for intelligence-requiring skills including abstract planning. Another is the orbitofrontal cortex located anteromedially in the prefrontal cortex. This sub-region is crucial for moral judgment and the so-called "social intelligence". The primary motor cortex in the posterior part of the frontal lobe is involved in the control of muscles. The premotor cortex, on the other hand, monitors the sequence of movements, making sure that you build attention in learning complicated parts of a motor sequence.

### The Parietal Lobe

The parietal lobe is the brain region posterior to the frontal lobe and superior to or above the occipital lobe. The function of the parietal lobe [1] majorly involves somatosensation through the somatosensory cortex. This includes the reception of sensory information from the tongue and the skin. Also, the parietal lobe houses the structures or areas that process sensory information from the eyes, ears and skin, mostly through the relay center – the thalamus. Visuospatial processing is also performed in some portions of the parietal lobe.

## The Occipital Lobe

The main processor of visual information from the retina, the occipital lobe plays a major role in visual processing. According to current research findings, damage to V1 leads to visual field-specific blindness. The occipital lobe features the visual area one or V1, a posterior pole where the information is projected from the retinas. The small areas found beyond V1 have varying tasks concerning visual processing. These include motion detection, color recognition and depth / distance perception. The occipital lobe also sends the processed visual information to the appropriate areas in the temporal and parietal lobes to undergo further processing.

## The Temporal Lobe

The temporal lobe of the brain is the site of auditory input and visual input combination. Auditory input is received from the thalamus by both the superior and medial areas of the temporal lobe. On the other hand, the inferior sub-region of the temporal lobe is responsible for processing visual information concerning object identification and pattern recognition. For instance, facial recognition is processed in the inferior aspect of the temporal lobe. Memory-dependent recognition is also a process that takes place in this particular brain region.

### Related pages:

[serendip.brynmawr.edu](http://serendip.brynmawr.edu) <sup>[1]</sup>

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### Links:

[1] <http://serendip.brynmawr.edu/bb/kinser/Structure1.html>, [2] <https://explorable.com/users/sarah>, [3] <https://explorable.com/lobes-of-the-brain>