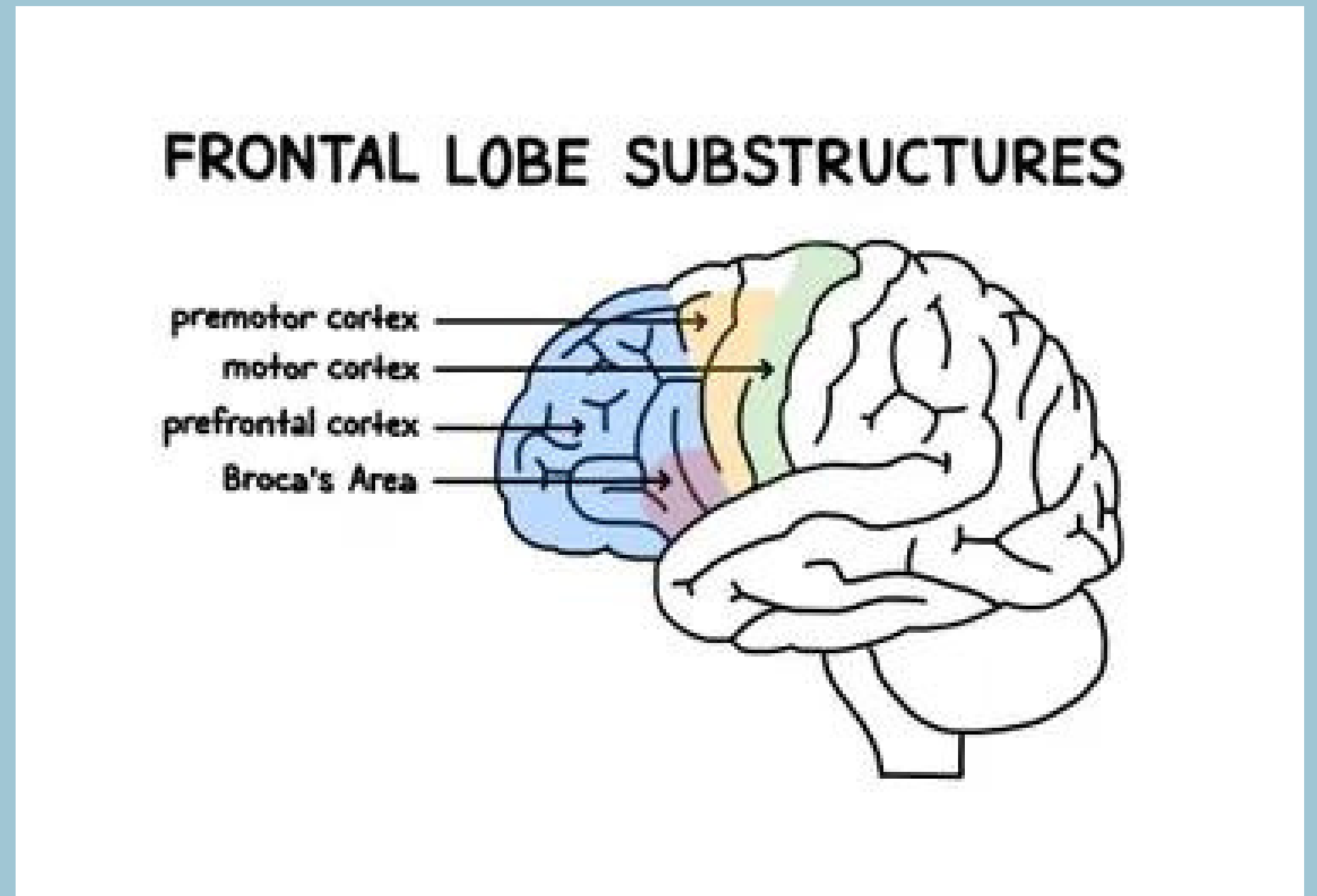


The Frontal Lobe



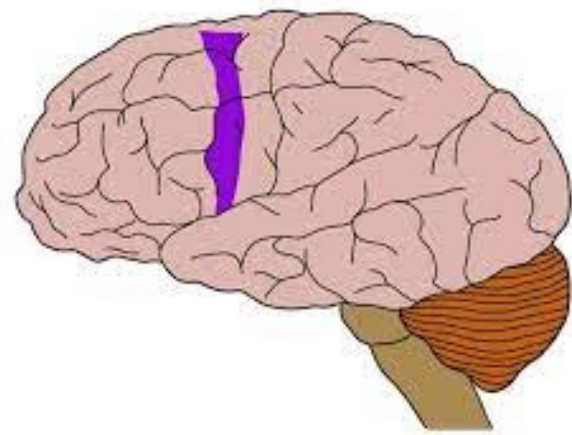
What is the frontal lobe and what does it do?

It is the largest part of the brain.

There are 4 parts, 1) Premotor cortex 2) Motor Cortex 3) Prefrontal Cortex 4) Brocas Area

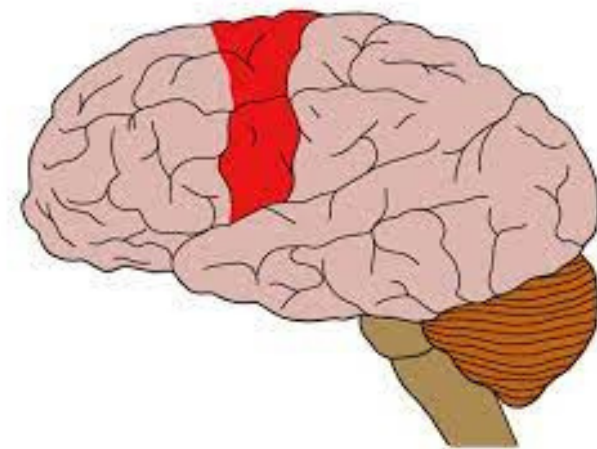
It is responsible for reasoning, learning and creativity. It is the home to personality and decision making abilities as well as the emotional control center

What Does Each Area Do?



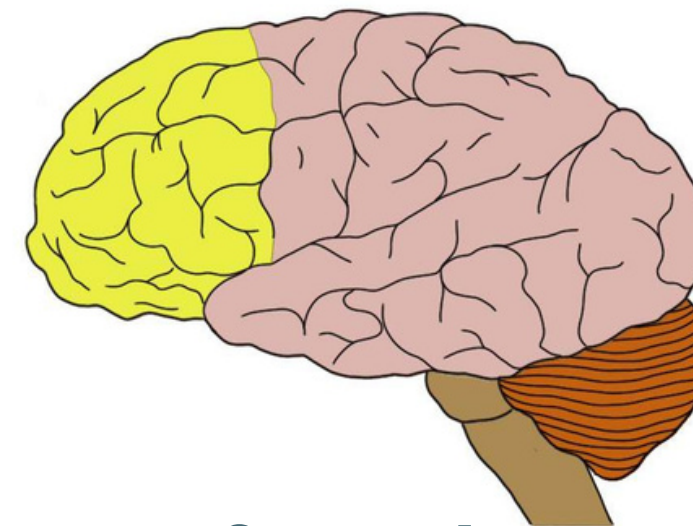
Premotor Cortex

Planning and organizing actions and movements



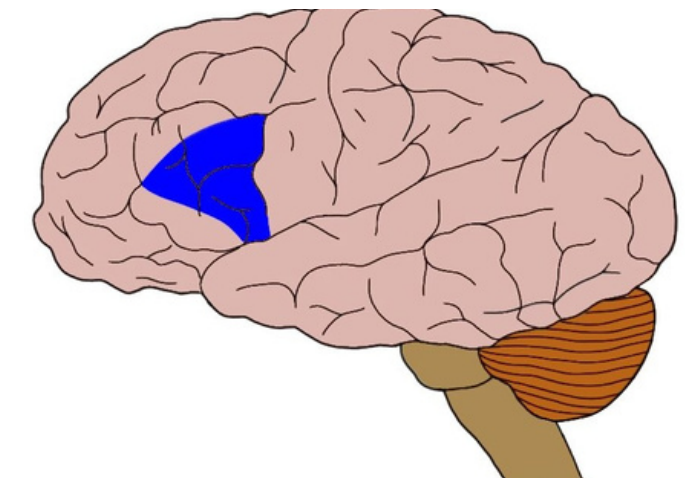
Motor Cortex

Production of skilled movements



Prefrontal Cortex

Complex behaviors, planning and personality development



Broca's Area

Regulates breathing patterns while speaking and vocalizations required for normal speech

Experiments

According to (Collins, A 2012) "The ability to adapt to uncertain, changing, and open-ended environments is a hallmark of human intelligence. In such natural situations, decision-making involves exploring, adjusting, and exploiting multiple behavioral strategies."

In the article (Collins, A 2012) they tested how the frontal lobe responded to decision making in everyday environments, particularly open-ended situations. They used multiple behavioral tests and models for the experiment.

They created a model called the PROBE model. Essentially the PROBE model showed that it "predicts human decisions and its variations across individuals in recurrent or open-ended environments, with variable external contingencies possibly associated with contextual cues."

References

1. Collins A, Koechlin E. Reasoning, learning, and creativity: frontal lobe function and human decision-making. *PLoS Biol.* 2012;10(3):e1001293. doi: 10.1371/journal.pbio.1001293. Epub 2012 Mar 27. PMID: 22479152; PMCID: PMC3313946. Found online at:
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3313946/>(Frontal brain Lobe: POSITION, FUNCTIONS, Diseases, conditions 2020)
3. “Premotor Cortex.” *Premotor Cortex - an Overview | ScienceDirect Topics*, <https://www.sciencedirect.com/topics/neuroscience/premotor-cortex>.
4. “Broca's Area.” *Broca's Area - an Overview | ScienceDirect Topics*, <https://www.sciencedirect.com/topics/neuroscience/brocas-area>.