

# Getting to Know Your Brain

## Crash Course Psychology #4 – Notes with In-built Quiz

case studies • central • debunked (invalidated) •  
localised • myth • newest • oldest • peripheral • phrenology

### The Story of a Pseudoscience

\_\_\_\_\_ was “the detailed study of the shape and size of the cranium as a supposed indication of character and mental abilities”. The bumps and ridges of the skull were assumed to reveal aspects of a person’s character.

Although the phrenologists’ ideas have been comprehensively \_\_\_\_\_, their idea that \_\_\_\_\_ parts of the brain have differing functions did continue to influence research into the brain.

### A Revealing Though Limited Case Study



After Phineas Gage’s horrific encounter with an iron rod, which entered his head through his left cheek and shot out through the top of his head, his memories and mental abilities were seemingly almost unaffected, and yet, based on the accounts of those who had known him before, his personality underwent a dramatic change. He died at 36 after a series of seizures. This story illustrates the limitations of

\_\_\_\_\_ that are not carefully and thoroughly carried out, but it also shows that damage to the frontal lobe can affect personality, a conclusion by no means commonly accepted at the time.

### An Essential Distinction

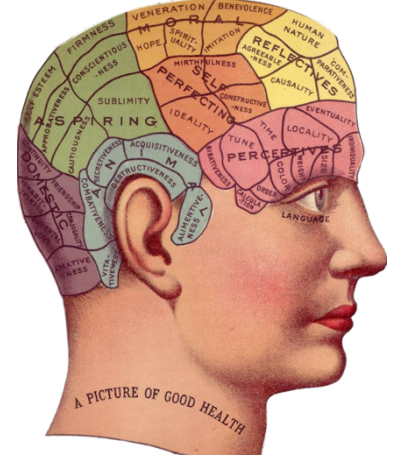
The \_\_\_\_\_ nervous system is the command centre of the body, while the \_\_\_\_\_ nervous system is the messenger system to and from the body.

### About the Brain

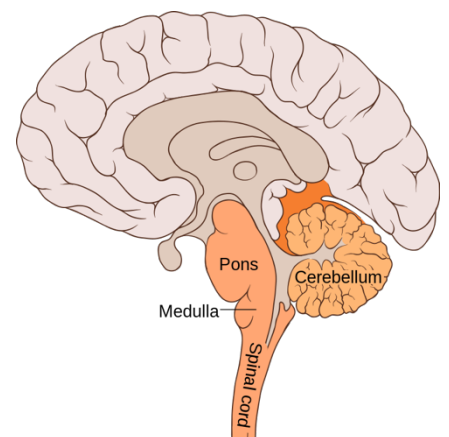
The oft-heard assertion that we use only 10% of our brain is false. It is a \_\_\_\_\_. The brain uses at least 20% of our energy and is active even when we are sleeping.

The \_\_\_\_\_ part of our brain, from an evolutionary perspective, is the most detailed and most complex.

Meanwhile the \_\_\_\_\_ part of the brain from the evolutionary perspective, sometimes also called the hindbrain, is described by Hank Green as a “fossil in one’s head”. It includes the brain stem, pons, medulla and the cerebellum and is responsible for everyday survival functions.



**Mapping the skull:** Chart based on the ideas of the phrenologists - **not** to be confused with science



**Structures in the Hindbrain**

Picture Acknowledgement:  
<https://qbi.uq.edu.au/brain/brain-anatomy/hindbrain>

# Brain Structures and Their Functions

Match the structures (listed on the left below in the order they are mentioned by Hank Green) with the description provided on the right. Place letters a-q in the boxes next to each function. **NOTE:** No term is more than 4 rows away from its function.

Brain Structure		Function
<b>a</b> brain stem	<input type="text"/>	Automatically controls the beating of the heart, the breathing of the lungs – all without our conscious awareness
<b>b</b> reticular formation	<input type="text" value="a"/>	The oldest part of the brain in evolutionary terms, the core of the brain, where the spinal cord enters the skull
<b>c</b> medulla	<input type="text"/>	Network inside the brain stem that is essential for arousal (i.e. sleeping, alertness)
<b>d</b> pons	<input type="text"/>	Made up of the amygdala, hypothalamus and hippocampus
<b>e</b> cerebellum	<input type="text"/>	Receives and relays information relating to every sensory system except smell
<b>f</b> thalamus	<input type="text"/>	Means “little brain” in Latin; important structure for non-verbal learning and memory, controls voluntary movement
<b>g</b> limbic system	<input type="text"/>	Sits on the medulla, helps to coordinate movement
<b>h</b> amygdala	<input type="text"/>	Makes up 85% of brain weight and allows us to think, speak and perceive
<b>i</b> hypothalamus	<input type="text"/>	Important for the consolidation of memory, the experience of fear and the aggression response
<b>j</b> hippocampus	<input type="text"/>	A thin layer of connected neurons divided into four lobes
<b>k</b> cerebrum	<input type="text"/>	Tiny structure that regulates the body and its circadian rhythms; think of the four Fs - feeding, fighting, fleeing and mating; controls the pleasure and reward systems of the body
<b>l</b> corpus callosum	<input type="text"/>	Central to learning and the consolidation of new memories
<b>m</b> cerebral cortex	<input type="text"/>	Responsible for sound processing, speech comprehension
<b>n</b> frontal lobe	<input type="text"/>	Processes the information relating to sight
<b>o</b> parietal lobe	<input type="text"/>	Connects the two cerebral hemispheres, allowing them to communicate
<b>p</b> occipital lobe	<input type="text"/>	Responsible for processing information relating to our sense of touch and body position
<b>q</b> temporal lobe	<input type="text"/>	Responsible for speaking, planning, judging, abstract thinking, aspects of personality