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## The Human Brain

The brain is made up of three main structures, the **cerebrum**, the **cerebellum** and the **brain stem**. The outer layer of the cerebrum is the **cerebral cortex** which comprises a left and a right hemisphere. The cerebral cortex is the part of the brain responsible for intelligence, language, memory and consciousness. It can be split into different areas, each area having its own specialised function.

The **Frontal Lobe** is important for thinking, memory, behaviour and movement.

The **Parietal Lobe** is important for language and touch.

The **Temporal Lobe** is important for hearing, learning and feelings.

The **Occipital Lobe** is important for sight.

The **cerebellum** (latin for "little brain") coordinates and regulates muscular activity and is important for balance and coordination.

The **brain stem** is important for controlling the basic functioning of the body such as breathing, heart rate and body temperature. It also forms the connection between the rest of the brain and the spinal cord.

Messages are sent around the brain through **neurons**. There are approximately 86 billion neurons in the brain which communicate through electric signals. In **epilepsy**, neurons become over excited and stop functioning properly. This results in the person having **seizures**. The CANDO project is developing a device that can be implanted in the brain to stop neurons malfunctioning using light.

- Complete the circuit diagram on the back of this sheet to introduce a light into the brain.

