Our ‘a closer look’ series of factsheets looks at some subjects in greater technical detail. Here we look at the brain. Our brains are made up of different areas that do different things and have different functions.

inside your head
Our brains lie inside our skull, wrapped in 3 layers of sheets called the meninges, which help to protect it. In between these sheets is a liquid called cerebrospinal fluid. This fluid helps to protect and cushion the brain (for example when we shake or nod our head), and even fills the spaces inside the brain itself. The fluid also helps to get oxygen to the brain so that it can function, and helps the brain to send messages around our body.

the cerebrum
The brain is made up of 3 areas, called the hindbrain, midbrain and forebrain. The biggest and most noticeable part of the brain is an area of the forebrain called the cerebral cortex or cerebrum. From the outside, the cerebrum looks like it has lots of folds in it with peaks (called gyri) and valleys (called sulci).

The cerebrum is made up of 2 halves - the right and left hemispheres, which are separated by a deep groove or crease. The 2 hemispheres have some functions that are the same, and some that are different. The left hemisphere of our brain controls the right side of our body, and the right hemisphere controls the left side of our body. Each hemisphere is made up of 4 areas called lobes. These lobes are the frontal, temporal, parietal and occipital lobes. Each lobe has a different range of functions.

frontal lobe
As the name suggests, these are the front parts of the brain - the part behind your forehead. The frontal lobes are involved in the movements you decide to do or ‘voluntary movement’ (for example picking up a cup of tea or walking upstairs) and conscious thought (thinking about what to have for dinner). They are also involved in learning, speech and in your personality.

temporal lobe
The temporal lobes are the side areas of the brain. The functions of these lobes include making memories and remembering, and emotion (such as feeling happy or sad). They are also involved in speech, hearing and perception (how we see the world around us).

parietal lobe
The parietal lobes are behind the frontal lobes and control how we feel and understand sensations, how we judge spatial relationships (such as the distance between two objects) and our co-ordination. They also help us with reading, writing, and maths and control some involuntary movements we make.

occipital lobe
The occipital lobes are at the back of the brain, behind the parietal lobes. These lobes control our sense of sight as they receive information from our eyes and make sense of what we see around us.

other areas of the brain
Under the 2 hemispheres of the cerebrum is part of the brain called the cerebellum, which helps to co-ordinate and organise all the other parts of the brain to make sure all areas are working together. It also has an important role in movement, balance and posture, (for example, helping us to stand upright when we walk). Under the cerebrum and cerebellum is the brain stem, which connects the brain to the spine. The brain stem has a vital role, controlling our breathing and heartbeat.

the hippocampus and epilepsy
Lying in the middle of the brain is part of the temporal lobe called the hippocampus. This part of the brain is involved in learning and in forming memories. If the hippocampus is damaged, it can cause epilepsy in some people.