Our Amazing Brain

There’s a mass of wrinkly material in your head, weighing around 1.3kg, which controls every single thing you will ever do. From enabling you to think, learn, create, and feel emotions to controlling every blink, breath, and heartbeat—this fantastic control centre is your brain. It is a structure so amazing that a famous scientist once called it "the most complex thing we have yet discovered in our universe."

Your brain is faster and more powerful than a supercomputer

Your kitten is on the kitchen counter. She's about to step onto a hot stove. You have only seconds to act. Accessing the signals coming from your eyes, your brain quickly calculates when, where, and at what speed you will need to dive to intercept her. Then it orders your muscles to do so. Your timing is perfect and she's safe. No computer can come close to your brain's awesome ability to download, process, and react to the flood of information coming from your eyes, ears, and other sensory organs.

Your brain generates enough electricity to power a lightbulb

Your brain contains about 100 billion microscopic cells called neurons—so many it would take you over 3,000 years to count them all. Whenever you dream, laugh, think, see, or move, it’s because tiny chemical and electrical signals are racing between these neurons along billions of tiny neuron highways. Believe it or not, the activity in your brain never stops. Countless messages zip around inside it every second like a supercharged pinball machine. Your neurons create and send more messages than all the phones in the entire world. And while a single neuron generates only a tiny amount of electricity, all your neurons together can generate enough electricity to power a low-wattage bulb.

Neurons send information to your brain at more than 150 miles (241 kilometres) per hour

A bee lands on your bare foot. Sensory neurons in your skin relay this information to your spinal cord and brain at a speed of more than 150 miles (241 kilometres) per hour. Your brain then uses motor neurons to transmit the message back through your spinal cord to your foot to shake the bee off quickly. Motor neurons can relay this information at more than 200 miles (322 kilometres) per hour.

When you learn, you change the structure of your brain

Riding a bike seems impossible at first. But soon you master it. How? As you practice, your brain sends "bike riding" messages along certain pathways of neurons over and over, forming new connections. In fact, the structure of your brain changes every time you learn, as well as whenever you have a new thought or memory.

Exercise helps improve your ability to learn, recall and remember knowledge and skills.

It is well known that any exercise that makes your heart beat faster, like running or playing basketball, is great for your body and can even help improve your mood. But scientists have recently learned that for a period of time after you've exercised, your body produces a chemical that makes your brain more receptive to learning. So if you're stuck on a homework problem, go out and play a game of football, then try the problem again. You just might discover that you're now able to solve it.