

The human nervous system What is the CNS?	The human nervous system Put in order: effector, receptor, coordinator, stimulus, response.
The human nervous system What does a sensory neurone do?	The human nervous system What does a relay neurone do?
The human nervous system What does a motor neurone do?	The human nervous system What is a synapse and how does it work?
The human nervous system Describe a reflex action and why it is important.	The human nervous system Ruler drop test: how is reaction time measured?

Stimulus, receptor, coordinator, effector, response.

The central nervous system: the brain and spinal cord. It coordinates the response of effectors.

Carries impulses within the CNS, from the sensory neurone to the motor neurone.

Carries electrical impulses from a receptor to the CNS.

A gap between two neurones. A chemical diffuses across the gap and starts an impulse in the next neurone.

Carries impulses from the CNS to an effector (a muscle or a gland).

Partner drops a ruler without warning; the person catches it. The distance it falls shows reaction time. Repeat and take a mean.

Automatic and rapid, not involving the conscious part of the brain. It protects the body from harm.

The human nervous system **Triple only**

Cerebral cortex: function?

The human nervous system **Triple only**

Cerebellum: function?

The human nervous system **Triple only**

Medulla: function?

The human nervous system **Triple only** **Higher tier**

Name three ways neuroscientists have mapped brain function.

The human nervous system **Triple only** **Higher tier**

Why is it difficult to investigate and treat brain disorders?

The human nervous system **Triple only**

Retina: function?

The human nervous system **Triple only**

Optic nerve: function?

The human nervous system **Triple only**

Sclera and cornea: functions?

Coordinates muscular activity and balance.

Consciousness, intelligence, memory and language.

Studying patients with brain damage, electrically stimulating parts of the brain, and MRI scanning.

Controls unconscious activities such as heart rate and breathing.

Contains the light receptors, which are sensitive to light intensity and colour. The image is focused here.

The brain is very complex and delicate.

Sclera: tough outer layer that protects the eye. Cornea: transparent front surface that refracts light into the eye.

Carries impulses from the retina to the brain.

The human nervous system **Triple only**

Iris: function? What happens in dim light?

The human nervous system **Triple only**

What are the ciliary muscles and suspensory ligaments for?

The human nervous system **Triple only**

What is accommodation?

The human nervous system **Triple only**

Focusing on a near object: what happens?

The human nervous system **Triple only**

Focusing on a distant object: what happens?

The human nervous system **Triple only**

Myopia and hyperopia: what are they and how are they corrected?

The human nervous system **Triple only**

Name newer treatments for eye defects.

The human nervous system **Triple only**

What monitors and controls body temperature?

They change the shape of the lens: the ciliary muscles contract or relax, and the ligaments loosen or tighten.

Controls how much light enters the pupil. In dim light the pupil widens so more light enters.

Ciliary muscles contract, suspensory ligaments loosen, the lens is thicker and refracts light strongly.

The process of changing the shape of the lens to focus on near or distant objects.

Myopia (short sight): focus in front of retina, concave lens. Hyperopia (long sight): focus behind retina, convex lens.

Ciliary muscles relax, suspensory ligaments are pulled tight, the lens is pulled thin and only slightly refracts light.

The thermoregulatory centre in the brain, which has receptors sensitive to blood temperature. Skin receptors send it impulses.

Hard and soft contact lenses, laser surgery to change the shape of the cornea, and a replacement lens.

The human nervous system **Triple only**

**Body temperature too high:
responses?**

The human nervous system **Triple only**

**Body temperature too low:
responses?**

Blood vessels constrict (vasoconstriction), sweating stops and skeletal muscles contract (shiver).

Blood vessels dilate (vasodilation) and sweat is produced. Both transfer energy from the skin to the environment.