

Nerves, hormones and homeostasis

Assessment statement	Teacher's notes
6.5.1 State that the nervous system consists of the central nervous system (CNS) and peripheral nerves, and is composed of cells called neurons that can carry rapid electrical impulses.	No other structural or functional divisions of the nervous system are required.
6.5.2 Draw and label a diagram of the structure of a motor neuron.	Include dendrites, cell body with nucleus, axon, myelin sheath, nodes of Ranvier and motor end plates.
6.5.3 State that nerve impulses are conducted from receptors to the CNS by sensory neurons, within the CNS by relay neurons, and from the CNS to effectors by motor neurons.	
6.5.4 Define resting potential and action potential (depolarization and repolarization).	
6.5.5 Explain how a nerve impulse passes along a non-myelinated neuron.	Include the movement of Na ⁺ and K ⁺ ions to create a resting potential and an action potential.
6.5.6 Explain the principles of synaptic transmission.	Include the release, diffusion and binding of the neurotransmitter, initiation of an action potential in the post-synaptic membrane, and subsequent removal of the neurotransmitter.
6.5.7 State that the endocrine system consists of glands that release hormones that are transported in the blood.	The nature and action of hormones or direct comparisons between nerve and endocrine systems are not required.
6.5.8 State that homeostasis involves maintaining the internal environment between limits, including blood pH, carbon dioxide concentration, blood glucose concentration, body temperature and water balance.	The internal environment consists of blood and tissue fluid.
6.5.9 Explain that homeostasis involves monitoring levels of variables and correcting changes in levels by negative feedback mechanisms.	
6.5.10 Explain the control of body temperature, including the transfer of heat in blood, and the roles of the hypothalamus, sweat glands, skin arterioles and shivering.	
6.5.11 Explain the control of blood glucose concentration, including the roles of glucagon, insulin and α and β cells in the pancreatic islets.	
6.5.12 Distinguish between type I and type II diabetes.	