B10 The Human Nervous System

Lessons TBAT	Key Knowledge	Practical	Assessment
TBAT: Explain the principles of homeostasis TBAT: Describe the structure and function of the nervous system TBAT: Explain how reflex actions work	Students should be able to explain that homeostasis is the regulation of the internal conditions of a cell or organism to maintain optimum conditions for function in response to internal and external changes. Homeostasis maintains optimal conditions for enzyme action and all cell functions. In the human body, these include control of: • blood glucose concentration • body temperature • water levels. These automatic control systems may involve nervous responses or chemical responses. All control systems include: • cells called receptors, which detect stimuli (changes in the environment) • coordination centres (such as the brain, spinal cord and pancreas) that receive and process information from receptors • effectors, muscles or glands, which bring about responses which restore optimum levels. Students should be able to explain how the structure of the nervous system is adapted to its functions. The nervous system enables humans to react to their surroundings and to coordinate	Required practical activity 6: plan and carry out an investigation into the effect of a factor on human reaction time.	Planning the required practical into reaction times. Maths focus Students should be able to extract and interpret data from graphs, charts and tables, about the functioning of the nervous system. Students should be able to translate information about reaction times between numerical and graphical forms.

	their behaviour. Information from receptors passes along cells (neurones) as electrical impulses to the central nervous system (CNS). The CNS is the brain and spinal cord. The CNS coordinates the response of effectors which may be muscles contracting or glands secreting hormones. stimulus receptor coordinator effector response Students should be able to explain how the various structures in a reflex arc – including the sensory neurone, synapse relay neurone and motor neurone – relate to their function. Students should understand why reflex actions are important. Reflex actions are automatic and rapid; they do not involve the conscious part of the brain.	Key stage 3 The skeletal and muscular systems ♣ the structure and functions of the human skeleton, to include support, protection, movement and making blood cells ♣ biomechanics – the interaction between skeleton and muscles, including the measurement of force exerted by different muscles ♣ the function of muscles and examples of antagonistic muscles.

B10 The Human Nervous System