N5 Biology MO2 Control and Communication Learning Outcome Checklist

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| Lesson | MC900432651[1] | by the end of each lesson you should know (including meanings of **key words**) |
| **Nervous Control - CNS** |  | * nervous system consists of **central nervous system (CNS)** and other nerves. * CNS consists of brain and **spinal cord**. * location of the **cerebrum**, **cerebellum** & **medulla** in the brain * the cerebrum is responsible for mental processes e.g. memory, reasoning, conscious thought * the cerebellum controls balance and coordination * function of the medulla is to control rate of breathing and heart beat |
| **Nervous Control - Nerves** |  | * **neurons** are nerve cells and transmit **electrical signals (impulses)** * **receptors** detect sensory input/stimuli * there are three types: **sensory**, **inter** and **motor**. * sensory neurons carry nerve impulses from the body’s **receptors** (in sense organs) to the CNS * motor neurons carry nerve impulses form the CNS to the body’s **effectors** (e.g. muscles / glands) * inter neurons carry nerve impulses and connect sensory neurons to motor neurons * electrical impulses carry **messages** along neurons. * where two neurons meet there is a small gap called a **synapse** * **chemicals** transfer the messages at synapses. |
| **Nervous Control – reflex ac** |  | * a **reflex action** is a fast, automatic response to a stimulus * reflex actions protect the body from damage * a **reflex arc** is the neural pathway that controls a reflex action * a reflex arc has the following stages * stimulus is detected * electrical impulse travels along the sensory neuron * impulse passes to inter neuron in the spinal cord * electrical impulse is passed onto a motor neuron * motor neuron sends the electrical impulse to an effector which brings about the response |
| **Hormonal Control** |  | * **endocrine** **glands** release hormones into the bloodstream. * **hormones** are proteins which function as chemical messengers. * a **target** tissue has cells with complementary **receptor** proteins for specific hormones, so only that tissue will be affected by these hormones. |
| **Hormonal Control – blood glucose** |  | * blood **glucose** regulation is achieved by the action of two hormones produced by the pancreas; **insulin** and **glucagon** * when there is excess glucose in the blood the body can store it as **glycogen** in the liver – **insulin** is released to activate the enzymes for this reaction * **glucagon** activates the enzymes for the conversion of glycogen back into glucose when blood glucose levels fall |