N5 Biology MO6 **Transport Systems – Animals** Learning Outcome Checklist

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| Lesson | MC900432651[1] | by the end of each lesson you should know about the following (including meanings of **key words**) |
| **blood** |  | * in mammals the blood contains **plasma**, **red blood cells** and **white blood cells**. * the cells are carried in the liquid plasma * blood transports **nutrients, oxygen** and **carbon dioxide**. |
| red blood cells |  | * red blood cells are very small and specialised to **transport oxygen** * red blood cells are **biconcave** in shape which presents a large surface area for the uptake of oxygen * red blood cells have **no nucleus** making more room for haemoglobin * red blood cells contain **haemoglobin** * haemoglobin picks up oxygen in the lungs and forms **oxyhaemoglobin** * in respiring tissues oxyhaemoglobin releases the oxygen |
| white blood cells |  | * **white blood cells** are part of the **immune system** and are involved in destroying pathogens. * **pathogens** are microorganisms that cause disease * there are two main types of white blood cells – **phagocytes** & **lymphocytes**. * phagocytes carry out a process called **phagocytosis** in which they engulf pathogens. * some lymphocytes produce Y shaped proteins called **antibodies** which destroy pathogens. * **specific** antibodies are produced for a particular pathogen. |
| heart |  | * the heart is a **muscular pump** that keep blood flowing round the body * the heart has **four chambers,** right and left **atrium** at the top, right and left **ventricle** at the bottom * the right side of the heart receives **deoxygenated** blood from the body in the **vena** **cava** (main vein) and pumps it to the lungs via the **pulmonary artery** * the left side of the heart receives **oxygenated** blood from the lungs in the **pulmonary vein** and pumps it to the body via the **aorta** (main artery) * the **muscle of the left ventricle is** **thicker** than the muscle of the right ventricle because the left ventricle **generates a greater force** to pump blood to the whole body not just to the lungs * the heart muscle receives its blood supply from the **coronary** **artery** * there are four **valves** in the heart that prevent the blood flowing back to the chamber it came from * location of all parts of the **heart on a diagram** |
| blood vessels |  | * **arteries** have **thick, muscular walls,** a **narrow central channel** and carry blood under **high pressure** **away** from the heart. * **veins** have **thinner** **walls**, a **wider channel** and carry blood under **low pressure back** towards the heart. Veins contain **valves** to prevent backflow of blood. * **capillaries** are **thin walled** and have a **large surface area**, forming networks at tissues and organs to allow efficient **exchange of materials**. |