**KS4 Biology – Human Biology**

In this module students will learn that the human body is composed of structures called organs, which are organised into organ systems that carry out all of the key processes of life. Students will begin to understand that these systems all require energy, which is contained in food and released in the cell by respiration. They will investigate the organ systems that are responsible for delivering food and oxygen to the cells and taking away waste. Students will learn how all key processes in the body are coordinated by the nervous system. Students will learn how health can be damaged by microbes and how the body can defend itself against most diseases but will sometimes need drugs in order to alleviate the symptoms and speed recovery.

Students will ‘work scientifically’ to achieve these goals, learning the key features of scientific enquiry; observing over time, pattern seeking, identifying, classifying, investigating (fair tests) and researching.

**RRS Articles:**

This unit of work is linked to Articles of the UN Convention on the Rights of the Child.

Article 13 (freedom of expression)

Article 24 (health and health services)

Article 29 (goals of education)

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|  | OU P Steps 5-6 | OU P Steps 7-8 | OU NC Step 1 | OU NC Step 2 |
| **Subject specific knowledge** | Knows that a cell is found in the body.  Knows where find brain, lungs, heart and intestines are in the body  Is able to explain that the heart is vital to life and that it beats when you are alive.  Knows some reasons why we eat food and how it helps us  Is able to identify 1 thing we need to stay alive.  Knows it is important to wash our hands and when it is appropriate to do so.  Knows the names of the sense organs and the organs and begins link the sense | Knows that cells are very small and we need microscopes to see them.  Knows the parts of a microscope and can name main parts.  Is able to identify cell, organ and tissue as large or small.  Knows how to identify brain, lungs, heart, liver, stomach and intestines on a diagram.  Knows that that the heart pumps blood around our body.  Use knowledge to explain why we eat food.  Knows the 4 of the major organs in the digestive system.  Knows and can explain why we wash our hands and when it is appropriate to do so linking it to germs.  Knows the names of the sense organs and what they sense. | Knows how to identify that you would find cells in all living things.  Knows the names and sahpes of specialised cells.  Knows the purpose of each part of the microscope when it is used.  Knows and can locate the brain, lungs, heart, liver, stomach and intestines on a diagram using key word list.  Knows that the heart pumps blood around our body and that it carries things that our body needs.  Knows why we eat food and what it gives us.  Knows what we need for life and suggest where we might get them from.  Knows and describes how we stop microorganisms entering the body. | Knows the names of the 3  main parts of a known (cell nucleus, cytoplasm and cell membrane)using labels.  Knows and relates a feature to a specialised cell e.g. nerve cell – long and thin.  Knows the basic function of the main organs.  Knows that that the heart pumps blood around our body, that the blood carries oxygen and it is carried in the veins.  Knows how to describe digestion.  Knows and explains the order of the organs of the digestive system (Mouth, stomach, food tube, pancreas, small and large intestine, anus) |
| **Subject specific skills** | Is able to use a picture method to use a microscope.  Is able to point to a main feature of a body e.g. arm, ear, knee.  Is able to group features that are found inside and outside of the body.  Is able to track the movement of food through a labelled digestive system naming the organs as they pass through.  Is able to use their senses to carry out an investigation. e.g. smell, taste, hearing.  Is able to use a heart rate monitor and recognise when a change occurs. | Is able to use a picture method to use and focus a microscope.  Is able to find the nucleus in a simple cell.  Is able to label a human body with the main features e.g. head, arm, eye. and some major internal organs e.g. brain, heart.  Is able to label the organ needed to digest food e.g. mouth, stomach, anus on a diagram using labels.  Is able to link a feature on a face to the sense e.g. what do we smell with.  Is able to use a heart rate monitor and recognise when a change occurs, linking it to heart beats. | Is able to put a picture method in order on how to use a microscope, and then follow it.  Is able to label a simple cell with nucleus, cytoplasm and cell membrane.  Is able to find the major organs in the body on a diagram or model.  Is able to label organs in the digestive system.  Is able to match a sense organ to what it senses.  Is able to use a heart rate monitor to track the changes during exercise. | Is able to put a written and picture method in order on how to use a microscope, and then use it.  Is able to label an known cell with nucleus, cytoplasm and cell membrane.  Is able to label the main organs in the human body and choose the correct role of each one.  Is able to label organs in the digestive system.  Is able to match the role of the organ in the digestion to its name.  Is able to match sense organ to what they sense.  Is able to use a heart rate monitor to track the changes during exercise and record the evidence in a table. |
| **Personal development** |