**Year 6 Science Curriculum – Spring 2**

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| **Theme: Human Circulation** | | | | | | | | | |
| **Curriculum objectives** | | | **Vocabulary** | | | | | | **Links across the curriculum** |
| To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.  To describe the ways in which nutrients and water are transported within animals, including humans. | | | **Circulate** | To move around a closed system or area. | **Contract** | | To make smaller by drawing together. | | PE:   * General physical activity and the impact on the body   English:   * Write an explanation text * Oracy   Maths:   * Presenting data in tables and graphs * Interpretation of data from tables and graphs   Links to secondary school with a heart dissection lesson. | |
| **Flow** | Continuous movement | **Pump** | | To move fluid by squeezing it along a tube. | |
| **System** | A group of things or parts that work together. | **Transport** | | To move something about. | |
| **Tier 3 vocabulary** | [SNAP23\_Y6\_M4\_circulation\_ms.docx (live.com)](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fstatic.collins.rhapsode.com%2FSnap_Science%2FTeaching_Science%2FYear_6%2FSNAP23_Y6_M4_circulation_ms.docx&wdOrigin=BROWSELINK) |  | |  | |
| **Prior knowledge:** *What specifically have pupils learned that is relevant to this unit that they are building upon?* | | | | | | **Future knowledge:** *What specifically will pupils learn in the future that is relevant to this unit?* | | | |
| Children have previously learnt:   * how the skeletal system moves our bodies and protects our organs whilst holding us upright (Year 3 Biology – Animals, including humans) * that the digestive system breaks down the food we eat into smaller pieces that our body can use for energy and growth, and that these travel in the bloodstream to the rest of the body (Year 4 Biology – Animals, including humans).   This module builds on learning about the human body from Key Stage 1, when they learned that humans and other animals need water, food and air in order to survive, and also during lower Key Stage 2, when they investigated the muscular, skeletal and digestive systems. | | | | | | This prepares children for later learning:   * about how physical activity keeps our heart healthy as it is a muscle, and how drugs (both medicinal and recreational) affect our health (Year 6 Biology – Animals including humans). | | | |
| **Lesson Sequence** | | **Key Knowledge** | | | | **Key Skills** | | | |
| 1. What is blood made of? | | - There are five litres of blood in the human body carried in blood vessels.  - Blood carries oxygen, nutrients and water.  - Blood is made of plasma, red blood cells, white blood cells and platelets. | | | | Working scientifically:   * reporting and presenting findings from enquiries, [including conclusions, causal relationships and explanations of and degree of trust in results], in oral and written forms such as displays and other presentations   Scientific enquiry type:   * research using secondary sources | | | |
| 1. What is the circulatory system and what does it do? | | - Identify the parts of the circulatory system.  - Blood must visit the lungs to pick up oxygen then revisit the heart to be pumped around the body.  - Enact the flow of blood around the body.  - Label a diagram of the heart.  - Explain that there are only three parts to the circulatory system:  - the blood, which circulates or travels round the whole body and which escapes when we cut ourselves  - the blood vessels that carry the blood, which children may be able to see where their skin is thin, such as inside their wrists  - the heart, which is the muscle that pumps the blood around the body.  A diagram showing the inside of the heart:  ● the red parts represent blood carrying lots of oxygen – oxygenated blood  ● the blue parts represent blood where the oxygen has been used up – deoxygenated blood. The blood is not really blue; this is just the way that scientists have agreed to show deoxygenated blood in diagrams of the body. In reality, oxygenated blood is bright red, and deoxygenated blood is dark red.  ● there are four chambers in the heart: two on each side. We will learn about these in the next lesson. Their names are atrium and ventricle.  ● the blood visits the heart twice: once to pump deoxygenated blood to the lungs and once to pump oxygenated blood to the rest of the body. | | | | Working scientifically:   * recording data and results of increasing complexity using scientific diagrams and labels, [classification keys, tables, scatter graphs, bar and line graphs] | | | |
| 1. What is a heart and what does it do? | | - The heart is a muscle.  -The left side pumps blood full of oxygen from the lungs, and the right side receives blood from the body that has had the oxygen used up.  - Blood becomes a brighter red colour when oxygen is absorbed and a darker red when the oxygen is used up.  - Make a 3D heart model and label the parts. | | | | Working scientifically:   * reporting and presenting findings from enquiries, [including conclusions, causal relationships and explanations of and degree of trust in results,] in oral and written forms such as displays and other presentations. | | | |
| 1. What are blood vessels and what do they do? | | - Arteries are blood vessels that carry blood away from the heart.  - Veins are blood vessels that carry the blood from the rest of the body back to the heart.  - How a one-way valve works.  - The heart and veins have valves to stop blood going backwards. | | | | Working scientifically:   * reporting and presenting findings from enquiries, [including conclusions, causal relationships and explanations of and degree of trust in results,] in oral and written forms such as displays and other presentations.   Scientific enquiry type:   * research using secondary sources. | | | |
| 1. What did William Harvey find out about the circulatory system? | | - Our bodies need water for a variety of life functions.  - Recall that water enters the body through the digestive system and is carried in the blood, along with nutrients from food and oxygen from the air we breathe.  - The scientist who discovered that blood circulates within the body, William Harvey. | | | | Working scientifically:   * reporting and presenting findings from enquiries, [including conclusions, causal relationships and explanations of and degree of trust in results,] in oral and written forms such as displays and other presentations. | | | |
| **Themes and links** | | | | | | | | | |
| **Themes (types of enquiry)** | **Where these are covered:** | | | | | | | **Links across the science curriculum** | |
| **Observation over time** |  | | | | | | | |  |  | | --- | --- | | **EYFS** |  | | **1** | Properties and used of materials | | **2** | Growing seeds and bulbs | | **3** | Forces, friction and magnets | | **4** | Human impact on the environment | | **5** | Plant and animal lifecycles | | **6** |  | | |
| **Research** | * Lesson 1 * Lesson 2 * Lesson 3 * Lesson 4 | | | | | | |
| **Pattern seeking** |  | | | | | | |
| **Comparative and fair testing** |  | | | | | | |
| **Identifying, classifying and grouping** |  | | | | | | |  | |