| **Science Year 6 Medium Term Planning – Advent 2: Animals including humans** | | | | | | | |
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| **National Curriculum**   * identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood * recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function * describe the ways in which nutrients and water are transported within animals, including humans   Water Transport:   * describe the ways in which nutrients and water are transported within animals, including humans | | | | | | | |
| **Prior vocabulary knowledge**  skeleton, muscles digestion nutrition oxygen  system digestion circulation muscle | | | | | | | |
|  | Lesson 1 and 2 | Lesson 3 | Lesson 4 and 5 | Lesson 6 | Water Transport  Lesson 7 | Lesson 8 | Lesson 9 |
| **Learning intention** | What is our heart like inside? How does it work? | ENRICHMENT  Who influenced what we know about our circulatory system? | What can we do to keep healthy? | ENRICHMENT  Present and explain what we know about the circulatory system, nutrients and keeping healthy | Remember circulation and digestion: how are these two systems connected?  ENRICHMENT | Where are the kidneys and what do they do? | How do kidneys keep us healthy? |
| **Working Scientifically** | Taking measurements, using a range of scientific equipment with increasing accuracy and precision, taking repeated readings when appropriate.  Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. | Identifying scientific evidence that has been used to support or refute ideas or arguments. | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.  Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.  Investigation:  Hypothesis:  Fruit drinks have less sugar than fizzy drinks.  Predict  Plan  Record and collect data  Analysis results in relation to prediction. | Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. | Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. | Researching from secondary sources. | Taking measurements, using a range of scientific equipment with increasing accuracy and precision, taking repeat readings when appropriate.  Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.  Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. |
| **Recall and retrieval** | CQ: 14-17 | CQ: 18 | CQ: 19-21 | CQ: 1-21 | CQ: 1-3 | CQ: 4-8 | CQ: 9-12 |
| **Sequence of knowledge throughout the lesson** | **Key knowledge**  To label parts of the heart.  To know the function of the left and right sides of the heart, including the role of the chambers on the left and right side of the heart.  To know the meaning and role of oxygenated and deoxygenated blood in the circulatory system. | **Key knowledge**  To know who Galen and William Harvey were, their jobs and their influence on knowledge and understanding of the circulatory system. | **Key knowledge**  To know that being healthy means to help keep the body functioning and the impact of exercising and drinking water on our bodies.  To know that being healthy means eating the right foods to keep our bodies functioning effectively. Food groups which should eat more of and more often and food groups we should have as treats and less often.  To know the benefit we get from eating healthily. | **Key knowledge**  To relate knowledge learnt this topic about circulatory system, nutrients and keeping healthy.  How they work and how nutrients affect the health and performance of the body.  To make a presentation about the circulatory system. | **Key knowledge**  To know the function and purpose of the circulatory system and the role the  • heart  • lungs  • arteries  • veins  • capillary  have in the circulatory system.  To know the blood carries oxygenated and deoxygenated blood.  To know nutrients from digestion are transported around the body in blood.  To know what the digestive system is.  To know the digestive system is responsible for the breaking down of food and liquids so that nutrients can be absorbed into the bloodstream.  To know the role of the  • mouth, teeth and oesophagus • stomach  • small and large intestines  colon and rectum  • faeces | **Key knowledge**  To know where the kidneys are in the body.  To know the kidneys filter toxins from blood.  To know the kidneys clean the blood.  To know that toxins must be dissolved in liquid to be excreted so they are transformed into urine using water.  To know that  cleaned blood is sent back to collect more oxygen, nutrients and waste products.  To know the kidneys send urine down two tubes - ureter and urine collects in the bladder as is | excreted by urination. | **Key knowledge**  To know the function of the kidneys.  To know the colour of urine shows the hydration/dehydration of a person.  To know what dehydration is, how it occurs and the effects of dehydration on the body. |
| **Scaffolding** | Peer support and discussion.  Stem sentences to explain the role of the right and left sides of the heart. | Peer support and discussion. | Peer support and discussion.  Scaffolded steps for investigation.  Simple conclusion about the results and whether the prediction was accurate. | Peer support and discussion.  Questions to guide knowledge of the  circulatory system, nutrients and keeping healthy | Peer support and discussion.  word mat- matching labels to parts. | Peer support and discussion.  Write a simple explanation of the role of the kidneys- word mat. | Peer support and discussion.  Write a simple explanation of why water is essential for the body.  Word mat |
| **Challenge** | To explain what would happen if the heart doesn’t function properly. | What theory of Galen’s did Harvey dispute and why? | Plan and carry out an investigation including reasons for variables. | Include scenarios about what happens if… when writing about the circulatory system, nutrients and keeping healthy to demonstrate understanding. | Using a scenario about what happens if… to describe the circulatory system, and digestive system. | What might be the problem…. | Use a darker colour of urine  (dehydration)  and discuss the possible reasons. |
| **Tier 2 vocabulary** | cell  chamber  system  circulation  vessel  clot | chamber  circulatory  vessel  chamber  cell |  | cell  chamber  system  circulation  vessel  clot | function  expel  substance | function  expel  transform  regulate  filter  substance | function  expel  transform  regulate  filter  substance |
| **Tier 3 vocabulary** | artery  capillary  vein  ventricle | artery  capillary  vein  ventricle |  | plasma  platelet  artery  capillary  vein  ventricle | excretion | kidney  bladder  urine  excretion  toxin  nutrients | kidney  bladder  urine  excretion  toxin  nutrients |