



# Christ the King Catholic Voluntary Academy

## Science Medium Term Plan – Why is oxygen so important for our bodies?



Animals, including Humans	NC Objectives	Term: Advent 1	Start Date: September 22
<p><b>Prior Learning:</b></p> <ul style="list-style-type: none"> <li>• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)</li> <li>• Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. (Y3 - Animals, including humans)</li> <li>• Describe the simple functions of the basic parts of the digestive system in humans. (Y4 - Animals, including humans)</li> <li>• Identify the different types of teeth in humans and their simple</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>• Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>• Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul> <p><b>Possible misconceptions:</b> Some children may think:</p> <ul style="list-style-type: none"> <li>• your heart is on the left side of your chest</li> <li>• the heart makes blood</li> <li>• the blood travels in one loop from the heart to the lungs and around the body</li> <li>• when we exercise, our heart beats faster to work the muscles more</li> <li>• some blood in our bodies is blue and some blood is red</li> <li>• we just eat food for energy</li> <li>• all fat is bad for you</li> <li>• all dairy is good for you</li> </ul>	<p><b>QFLs + Resources + Enquiry types being used</b> (Fair/comparative test, observations, sort &amp; classify, pattern seeking, research)</p>	<p><b>Key Knowledge (What is the answer to each QFL?)</b></p> <ul style="list-style-type: none"> <li>-When we breathe in, we take oxygen into our lungs. The oxygen is absorbed into the blood in our lungs through tiny blood vessels. Once in the blood, it is taken to the heart to be pumped around the body.</li> <li>-Respiration happens in the body and the oxygen is used up leaving carbon dioxide in its place. This carbon dioxide is transported back into the blood and back to the heart where it is sent to the lungs to be oxygenated again.</li> <li>-Blood with no oxygen (deoxygenated blood) enters the right atrium. It then passes through a valve into the right ventricle. The blood is then pumped to the lungs to be oxygenated. It then travels back to the heart and enters the left atrium. It then passes through a valve into the left ventricle. It then passes through the aorta to oxygenate the rest of the body.</li> </ul>
		<p><b>Pre unit assessment (lesson 1):</b> <i>Revise prior learning-</i> Quiz from pent 2 (y5), question knowledge of what blood is <i>Assess new learning/skills-</i> Mind map <b>Resources:</b></p>	
		<p><b>Lesson 1: QFL: <u>Can I identify and describe the function of blood?</u></b> <b>Enquiry types covered:</b> Observe <b>Resources:</b> Blender, raspberries, marshmallows, pineapple juice, sprinkles, cups</p>	
		<p><b>Lesson 2: QFL: <u>Can I identify and describe the function of the heart?</u></b> <b>Enquiry types covered:</b> Observe <b>Resources:</b></p>	

<p>functions. (Y4 - Animals, including humans)</p> <p><b>Future Learning:</b> The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. (KS3)</p> <ul style="list-style-type: none"> <li>• The effects of recreational drugs (including substance misuse) on behaviour, health and life processes. (KS3)</li> <li>• The structure and functions of the gas exchange system in humans, including adaptations to function. (KS3)</li> <li>• The mechanism of breathing to move air in and out of the lungs. (KS3)</li> <li>• The impact of exercise, asthma and smoking on the human gas exchange</li> </ul>	<ul style="list-style-type: none"> <li>• protein is good for you, so you can eat as much as you want</li> <li>• foods only contain fat if you can see it</li> <li>• all drugs are bad for you.</li> </ul>	<p><b><u>Lesson 3: QFL: Can I identify and describe the function of the lungs and the circulatory system?</u></b> <b>Enquiry types covered:</b> Observe <b>Resources:</b> circulatory system labels, photos of chn for books (post lesson)</p> <p><b><u>Lesson 4: QFL: Can I investigate and understand the effect of exercise on the body?</u></b> <b>Enquiry types covered:</b> Fair testing and pattern spotting <b>Resources:</b> PE equipment (skipping ropes), stopwatches, investigation template for books</p> <p><b><u>Lesson 5: QFL: Can I research the impacts of drugs on the body?</u></b> <b>Enquiry types covered:</b> Research <b>Resources:</b> Paper (app shapes), iPads</p> <p><b><u>Lesson 6: QFL: Can I understand what makes a balanced diet?</u></b> <b>Enquiry types covered:</b> Observe <b>Resources:</b></p> <p><b><u>End of block assessment: Can I demonstrate my learning from the unit?</u></b> <b>Revise</b> <b>Reflection</b> - Create a poster to educate people on the importance of keeping our bodies healthy. You <b>MUST</b> answer these questions: -How does oxygen enter into our blood? -How is oxygen pumped around our bodies? -How does exercise impact the oxygen that is pumped around our body? -Do drugs impact the oxygen around our body? -How does eating healthily help to keep oxygen flowing around our body?</p>	<p>-Blood is made up of four components: red blood cells, white blood cells, plasma and platelets.</p> <p>-Red blood cells carry oxygen around the body and carbon dioxide out of the body.</p> <p>-White blood cells protect the body by killing harmful bacteria and viruses.</p> <p>-Plasma carries hormones, nutrients and proteins around the body which we need to survive.</p> <p>-Platelets play a major role in blood clotting by plugging holes in injured blood vessels and stopping bleeding.</p> <p>-Lifestyle is an important factor in keeping our bodies healthy.</p> <p>-Exercise helps to maintain healthy physical and mental health. It releases healthy hormones and helps to keep vital organs working well.</p> <p>-Humans should eat a balanced diet comprised of fruit and vegetables, carbohydrates, dairy, protein, and oils and spreads. Foods that are high in fat/sugar should be eaten less often and in small amounts.</p> <p>-Some drugs can help us to feel better when we are unwell, but</p>
---	---	---	--

system. (KS3)

some drugs have detrimental effects on our bodies, e.g. cigarettes contain tobacco which causes damage to the lungs whilst paracetamol can provide pain relief.

**Vocabulary**

Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle

**Real life application**

Making informed choices regarding drugs and alcohol  
Understand the dangers of substances on the body  
Understand how blood flows throughout the body  
Understand the importance of a healthy balanced diet and exercise for maintaining physical and mental health