

**Subject –Science Spring 1 Year 6 Animals including humans**

**TAPS Assessment: Plan Heartrate Pose**

Key vocabulary: Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle					
National Curriculum	Week	NC - Coverage	Disciplinary Knowledge	Factual Knowledge	Activity Outline
<p><b>The national curriculum for Science aims to ensure that all pupils:</b></p> <p><b>Working Scientifically Upper KS2</b> pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <p>§ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>§ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p>	1	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p>	<p>Make predictions about how easy it would be to see different objects if identify the main components of the amounts of light.</p> <p>circulatory system.</p>	<p>I know the three parts of the human circulatory system are the heart, blood vessels and blood.</p> <p>I know that the heart is a muscle that pumps blood around your body.</p> <p>I know that blood transports nutrients, oxygen and water around the body.</p>	<p>KWL grid: Use prompt questions to help them think about what already know about the circulatory system Is there anything else you know about the circulatory system? e.g. which parts of the body does the circulatory system include? Why do we need blood in our body? Complete BBI &amp; Meet the Scientist.</p> <p>Teacher to introduce the basic parts of the circulatory system and explain how the double circulatory system works I,e that the oxygenated blood is pumped around the body and the deoxygenated blood is pumped to the lungs. Ask children to role play ‘the journey of blood’ around the body.</p> <p>Firstly, children will map out heart, lungs, blood vessels and muscles onto the floor in the playground using hoops. The children to move around the body as though they were the blood. Teacher to say ‘freeze’ at given moments, children to stop moving and explain to the person in front of them where they are in the circulatory system. Capture evidence orally.</p>

<p>§ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>§ using test results to make predictions to set up further comparative and fair tests</p> <p>§ 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</p> <p>§ identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>2</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p>	<p>To use information acquired from secondary sources to write a scientific report on how the human circulatory system works.</p>	<p>I know the names of the circulatory system and describe their functions.</p> <p>I know that nutrients and oxygen are transported around the body in the blood.</p> <p>I know that humans have a double circulatory system.</p>	<p>Following CT explanation of key concepts i.e., the features and functions of the human circulatory system (using provided heart models) children to carry out independent research and write scientific non chronological reports about the circulatory system. Children to understand the concept of oxygenated and deoxygenated blood, the role of blood in transporting water, nutrients and waste products (carbon dioxide) and the flow of blood from the heart to the lungs.</p>
<p><b>Subject Content</b></p> <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>3</p>	<p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p>	<p>To use labelled diagrams to support their understanding of the impact of exercise, diet, drugs on the body.</p>	<p>I know the positive and negative impact of diet, lifestyle, or drugs on the body.</p> <p>I know that a healthy lifestyle and regular exercise strengthens the heart whereas some drugs can damage the heart.</p>	<p>Teacher to ask children in groups to discuss their ideas about how to keep their bodies healthy and what can damage their bodies. Ask children to share their ideas with the whole class and to produce a detailed poster or 'health leaflet' to share this understanding more widely.</p>
	<p>4</p>	<p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p>	<p>To take measurements, with increasing accuracy and precision, taking repeat readings when appropriate.</p>	<p>I know that pattern seeking investigations are used when the variables cannot be controlled.</p> <p>I know that the resting pulse rate varies</p>	<p>Children to use the next three lessons to carry out and interpret results from pulse rate investigations: pattern seeking – exploring which groups of people may have higher or lower resting pulse rates e.g. those who play sports/those who do not. Boys/Girls Age groups. Children to select which groups they would like to investigate. Show children how to measure their pulse rates. Children to record their results in their own tables.</p>

<p><b>Common Misconceptions</b></p> <p>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> <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>				depending on factors such as age.	
	5	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	To report and presenting findings from enquiries, including conclusions, causal relationships.	I know that data can be collated to support or refute (or neither) initial predictions. To know that. To be able to identify anomalies e.g. inaccurate measurements	Continuing from last lesson children to use their data to present data as charts checking whether the axes are correct, labelled correctly, a suitable scale is used and the bars are plotted correctly. Children to use their data to refute/support their initial ideas that there might be a difference (or not) between the pulse rates of the two chosen groups. Children to also pick out the anomalies and look for a pattern (or lack of one) in their results.
	6	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	To record data and results of increasing complexity using tables, scatter graphs, bar and line graphs and using test results to make predictions to set up further tests.	I know that different types of exercise will impact the pulse rate differently: e.g., aerobic exercises such as running and jumping increase your heart rate because your muscles need more oxygen when you exert yourself.	Ask children to plan and carry out a comparative investigation to observe their pulse rate after exercising. They are to select two different types of exercise and measure their pulse rate at regular intervals. Ask children to choose how to plot their data e.g., as a line graph. Teacher to ensure that their conclusion focuses on a comparison of the types of exercise, scientific reasons for the overall pattern and identifying anomalies.