



Sacred Heart Primary School

Science Plan

Science - Animals including humans



Attention Grabber: Model of a human body/skeleton. Could link in with some history of human autopsy etc.

Rationale: Children will build on their knowledge and understanding of different systems within the body. They will research the parts and functions of the circulatory system. They will focus on how nutrients are transported around the human body. Children will explore how a healthy lifestyle supports the body to function and how different types of drugs affect the body.

Learning Objectives:

- I can identify and name the parts of the human circulatory system.
- I can describe the functions of the main parts of the circulatory system.
- I can explain how water and nutrients are transported within the body.
- I can describe how diet and exercise impact on human bodies.
- I can plan a scientific enquiry.
- I can record, report and present results appropriately.
- I can explain the impact of drugs and alcohol on the body.
- I can describe how scientific evidence highlighted the dangers of smoking.

Overview:

Lesson 1: The Circulatory System: Parts. To identify and name the main parts of the human

Circulatory system by recalling prior knowledge of systems in the human body and labelling a diagram.

Lesson 2: The Circulatory System: Functions. To describe the functions of the heart, blood vessels and blood by investigating how the different parts of the circulatory system work.

Lesson 3: Transporting Water and Nutrients. To describe the ways in which nutrients and water are transported within animals, including humans in the context of the human body.

Lesson 4: Healthy Lifestyle. To recognise the impact of diet and exercise on the way their bodies function by describing the effects of a healthy lifestyle.

Lesson 5: Exercise Investigation. To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurement with increasing accuracy and precision, taking repeat readings when appropriate by creating an enquiry that compares and categorises different forms of exercise and by taking accurate pulse measurements to gather data. To record data and results of increasing complexity using classification keys, tables, scatter graphs, bar and line graphs. To report findings from enquiries, including conclusions and degree of trust in results, in written forms by reporting and presenting the findings of their enquiry.

Lesson 6: Impact of Drugs and Alcohol. To recognise the impact of drugs on the way their bodies function in the context of drugs and alcohol. To identify scientific evidence that has been used to support or refute ideas or arguments in the context of changing attitudes to smoking.

SMSVC Links

N/A

Cross-Curricular Links

N/A

Resources

General classroom resources required – no specialist resources aside from session 2 where computers will be needed.

Opportunities for enrichment:

Videos online, could do possible trip to London Science Museum etc

Present field guides to audience either other classes or other adults

Impact/Assessment

Most Children will: Demonstrate prior knowledge of systems within the human body. Explain the specific functions of the lungs in the circulatory system. Understand the processes of how water and

nutrients are transported in the body. State the beneficial impact of a healthy diet and exercise on the human body. Describe how smoking cigarettes impacts negatively on the body. Decide on the most appropriate type of investigation for their question. Take repeat readings if necessary. Report the degree of trust they have in their results.

Less Able Children will: Identify the main parts of the circulatory system. Explain the main functions of the heart, lungs and blood vessels in the circulatory system. State how the digestive system breaks down nutrients. Explain what constitutes a healthy lifestyle. Describe how drugs and alcohol can impact negatively on the body. Take accurate measures of the pulse rate. Record results and write a report which includes a conclusion.

More Able Children will: Name the organs, the main parts of those organs and the functions of each in the circulatory system. Identify and explain the processes which break down food into nutrients. Understand how the circulatory and digestive system connect to transport water and nutrients throughout the body. Identify and explain the variables they will control in an investigation. Choose the most appropriate graph to present their data. Explain how scientific evidence has changed ideas about smoking.

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Progression in Science Skills						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning and Communication and Sources	<p>draw simple pictures</p> <p>talk about what they see and do</p> <p>use simple charts to communicate findings</p> <p>identify key features</p> <p>ask questions</p>	<p>describe their observations using some scientific vocabulary</p> <p>use a range of simple texts to find information</p> <p>suggest how to find things out</p> <p>identify key features</p> <p>ask questions</p>	<p>use pictures, writing, diagrams and tables as directed by their teacher</p> <p>use simple texts, directed by the teacher, to find information</p> <p>record their observations in written, pictorial and diagrammatic forms</p> <p>select the appropriate format to record their observations</p>	<p>record observations, comparisons and measurements using tables and bar charts</p> <p>begin to plot points to form a simple graph</p> <p>use graphs to point out and interpret patterns in their data</p> <p>select information from a range of sources provided for them</p>	<p>record observations systematically</p> <p>use appropriate scientific language and conventions to communicate quantitative and qualitative data</p> <p>select a range of appropriate sources of information including books, internet and CD Rom</p>	<p>choose scales for graphs which show data and features effectively</p> <p>identify measurements and observations which do not fit into the main pattern</p> <p>begin to explain anomalous data</p> <p>use appropriate ways to communicate quantitative data using scientific language</p>
Enquiring and Testing and Obtaining and Presenting Evidence	<p>test ideas suggested to them</p> <p>say what they think will happen</p> <p>use first hand experiences to answer questions</p> <p>begin to compare some living things</p>	<p>use simple equipment provided to aid observation</p> <p>compare objects, living things or events</p> <p>make observations relevant to their task</p> <p>begin to recognise when a test or comparison is unfair</p> <p>use first hand experiences to answer questions</p>	<p>put forward own ideas about how to find the answers to questions</p> <p>recognise the need to collect data to answer questions</p> <p>carry out a fair test with support</p> <p>recognise and explain why it is a fair test</p> <p>with help, pupils begin to realise that scientific ideas are based on evidence</p>	<p>with help, pupils begin to realise that scientific ideas are based on evidence</p> <p>show in the way they perform their tasks how to vary one factor while keeping others the same</p> <p>decide on an appropriate approach in their own investigations to answer questions</p> <p>describe which factors they are varying and which will remain the same and say why</p>	<p>use previous knowledge and experience combined with experimental evidence to provide scientific explanations</p> <p>recognise the key factors to be considered in carrying out a fair test</p>	<p>describe evidence for a scientific idea</p> <p>use scientific knowledge to identify an approach for an investigation</p> <p>explain how the interpretation leads to new ideas</p>

Observing and Recording	<p>make observations using appropriate senses</p> <p>record observations</p> <p>communicate observations orally, in drawing, labelling, simple writing and using ICT</p>	<p>respond to questions asked by the teacher</p> <p>ask questions</p> <p>collect and record data (supported by the teacher)</p> <p>suggest how they could collect data to answer questions</p> <p>begin to select equipment from a limited</p>	<p>make relevant observations</p> <p>measure using given equipment</p> <p>select equipment from a limited range</p>	<p>carry out measurement accurately</p> <p>make a series of observations, comparisons and measurements</p> <p>select and use suitable equipment</p> <p>make a series of observations and measurements adequate for the task</p>	<p>make a series of observations, comparisons and measurements with increasing precision</p> <p>select apparatus for a range of tasks</p> <p>plan to use apparatus effectively</p> <p>begin to make repeat observations and measurements</p>	<p>measure quantities with precision using fine – scale divisions</p> <p>select and use information effectively</p> <p>make enough measurements or observations for the required task</p>
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