

Be Brave, Be  
Curious, Be Kind

## Lesson Breakdown - Science



Autumn – Cycle B – UKS2

### Prior Learning – EYFS – PSED curriculum

- try new activities and look after their basic hygiene needs
- learning about the importance of good oral hygiene
- knowledge of looking after their hygiene as they explore the importance of handwashing

### Prior Learning – KS1

- create a human timeline showing the different stages of growth
- sort healthy foods and understand healthy amounts relative food type
- understand the importance of exercise and design their own circuit
- understand the importance of keeping clean and how do this daily
- design a timetable of the day that shows healthy choices for food, exercise and hygiene

### Prior Learning – LKS2

- explore and name different types of teeth
- explain how carnivores, herbivores and omnivores use their teeth in different ways
- describe the basic functions of a human digestive system
- construct and interpret a variety of food chains
- investigate how poo is made

Project: <u>Animals including humans</u>	Learning Objective	Skills	Knowledge	Resources
Engage Lesson 1	To understand the role and function of the skeletal system.  <b>identify and name the main parts of the human circulatory system, and describe the functions of</b>	Identify scientific evidence that has been used to support or refute ideas or arguments.	The skeletal system is composed of four main fibrous and mineralized connective tissues : bones, ligaments, tendons, and joints.	•

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	<b>the heart, blood vessels and blood</b>			
Engage Lesson 2	To understand the role and function of the muscular system.  <b>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</b>	Identify scientific evidence that has been used to support or refute ideas or arguments.	The muscular system consists of skeletal, smooth and cardiac muscles: Skeletal muscles: These create movement in the body. There are nearly 700 skeletal muscles and make up about 40% of a person's body weight. Smooth muscles: These are involuntary muscles that line the walls of the blood vessels and viscera (organs in the abdominal cavity). Cardiac muscles: These cause the heart to contract and expand properly.	•
Engage Lesson 3	To understand the role and function of the circulatory system.  <b>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</b>  <b>describe the ways in which nutrients and water are transported within animals, including humans</b>	Demonstrate how blood transports nutrients, water, gases and waste around the body. Explore and demonstrate how the circulatory system works including the role of the heart.	Main parts of the circulatory system: Heart, a muscular organ that pumps blood throughout your body. Blood vessels, which include your arteries, veins and capillaries. Blood, made up of red and white blood cells, plasma and platelets.	
Develop Lesson 4	To label the parts of the heart.  <b>identify and name the main parts of the human circulatory system, and</b>	Explore the structure and function of the human heart.	Understand that the heart is made up of 4 chambers, through and from which blood is pumped through the body. These four chambers are called the left ventricle, right ventricle, left atrium and right atrium.	

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	<p>describe the functions of the heart, blood vessels and blood</p>			
Develop Lesson 5	<p>To know the different components of blood.</p> <p>describe the ways in which nutrients and water are transported within animals, including humans</p>	<p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Understand that there are four components - or parts - of the blood: red blood cells, white blood cells, plasma and platelets.</p>	
Develop Lesson 6	<p>To understand the impact of exercise on our bodies.</p> <p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p>	<p>Asking scientific questions.</p> <p>Applying scientific knowledge to support in carrying out scientific investigations.</p>	<p>Exercise causes an increase in pulse rate (heart rate). When exercising our muscles contract more often and require more energy. Energy is made during the process of respiration. As more glucose and oxygen is needed, cardiac output (blood pumped per minute) and blood flow to the muscles increases.</p>	
Develop Lesson 7	<p>To analyse and record whole class data.</p> <p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p>	<p>Asking scientific questions.</p> <p>Applying scientific knowledge to support in carrying out scientific investigations.</p>	<p>Data can be displayed in many ways which can highlight causal relationships. Positive, negative and no correlation can teach us about the results we have found.</p>	
Develop Lesson 8	<p>To describe the effect of unhealthy substances on the human body.</p> <p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p>	<p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Nicotine also increases heart rate and blood pressure, and makes blood vessels narrower than normal. This can lead to heart disease.</p>	<ul style="list-style-type: none"> <li>•</li> </ul>

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Develop Lesson 9	To understand the impact of blood flow on the body.  <b>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</b>	Asking scientific questions.  Applying scientific knowledge to support in carrying out scientific investigations.	Blood flows around the body transporting nutrients and water to the various organs.	•
Innovate Lesson 10	To compare heart rates in different conditions.  <b>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</b>  <b>describe the ways in which nutrients and water are transported within animals, including humans</b>	Asking scientific questions.  Applying scientific knowledge to support in carrying out scientific investigations.	Exercise causes an increase in pulse rate (heart rate). When exercising our muscles contract more often and require more energy. Energy is made during the process of respiration . As more glucose and oxygen is needed, cardiac output (blood pumped per minute) and blood flow to the muscles increases.	•
Innovate Lesson 11	To analyse and record results and construct scientific conclusions from these.	Asking scientific questions.  Applying scientific knowledge to support in carrying out scientific investigations.	Data can be displayed in many ways which can highlight causal relationships. Positive, negative and no correlation can teach us about the results we have found.	•
Express Lesson 12: Assessment	To be able to recall knowledge from this project.	n/a	n/a	n/a

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### Key Vocabulary:

addiction alcohol arteries blood	blood vessels capillaries carbon dioxide cigarettes	circulation circulatory depressant diet	disease drugs exercise	hallucinogen health heart	lifestyle medicine nutrients	oxygen pump stimulant	system veins water
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