Year 5 Curriculum Term 3

Topic Title: Blood Heart	
English	**Maths**
Reading – 'Pig Heart Boy' In the upcoming term, the focus of our Reading lessons will revolve around the compelling novel 'Pig Heart Boy'. Through our Whole Class Guided Reading sessions, we will delve into various aspects of the text to enhance our students' literacy skills. Whole Class Guided Reading Schedule: Lesson 1 (Vocabulary / General Knowledge): This session will concentrate on expanding the students' vocabulary and reinforcing their understanding of key concepts within the text. Lesson 2 (Just Read): Students will engage in independent reading of the assigned passages, fostering a love for literature and encouraging personal interpretation. Lesson 3 (Close Read): Through a detailed analysis of select passages, students will develop a deeper comprehension of the text's themes and characters. Lesson 4 (Comprehension): This session will focus on honing the students' ability to comprehend and articulate the events and messages conveyed in the novel. Lesson 5 (Library Visit): To nurture a love of reading beyond the classroom, students will have the opportunity to explore the school library and choose books of personal interest. By following this structured reading programme, we aim to cultivate a generation of enthusiastic and proficient readers.	**Multiplication Skills** **1. Multiply up to a 4-digit number by a 1-digit number** • multiply 4-digit numbers by a single-digit number, demonstrating an understanding of place value and the ability to carry over numbers accurately. **2. Multiply a 2-digit number by a 2-digit number (area model)** • use the area model to visualize and calculate the product of two 2-digit numbers. This method helps to understand the distribution of numbers over tens and units. **3. Multiply a 2-digit number by a 2-digit number** • master the standard algorithm for multiplying two 2-digit numbers, ensuring accuracy in their calculations. **4. Multiply a 3-digit number by a 2-digit number** • multiplication skills to include 3-digit numbers multiplied by 2-digit numbers using a formal written method. **5. Multiply a 4-digit number by a 2-digit number** • multiplying 4-digit numbers by 2-digit numbers, utilising efficient multiplication strategies and checking their work for errors. **Division Skills** **6. Short division** • method of short division (bus stop method) for dividing numbers where appropriate, understanding how to handle remainders. **7. Divide a 4-digit number by a 1-digit number**

Courage **Resilience** **Honesty** **Kindness**

Matthew 7:24 - "Therefore everyone who hears these words of mine and puts them into practice is like a wise man who built his house on the rock"

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Fiction – The Nightmare Man

Continue from Year 3/4:

- Let the threat get closer and closer
- Show the character's feelings by reactions, e.g. she froze
- Include short punchy sentences for drama
- Use rhetorical questions to make the reader worried – Who had turned out the light?
- Use empty words to hide the threat – something, somebody, it, a silhouette
- Select powerful verbs – crept, grabbed, smothered
- Use dramatic connectives – in an instant, without warning, out of the blue

Year 5/6 Features:

- Hide the threat
- Use an abandoned setting or lull thereader with a cosy setting
- Personify the setting to make it sound dangerous – use the weather and/or time of day to create atmosphere
- Make your character hear, see, touch, smell or sense something ominous
- Surprise the reader with the unexpected
- Suggest something is about to happen
- Reveal the character's thoughts, e.g. She wondered if she would ever escape the darkness.
- Slow the action by using sentences of three and drop in clauses.

Non-Fiction – Newspaper Report

This term, students will focus on the essential features of newspaper reports while engaging with the inspiring story of Cameron Kelsey, known as the Pig Heart Boy. The aim is for children to understand the distinctive structure and language of journalistic writing.

Key features of an effective newspaper report will include:

Headline: A captivating title that summarises the main event.

- short division to divide 4-digit numbers by a single-digit number, consolidating their division skills.

8. Divide with remainders

- interpret and respond to remainders in division calculations is essential. Pupils should know when to round or adjust calculations based on the context of the problem.

9. Efficient division

- choose and apply the most efficient division methods depending on the numbers involved, ensuring accuracy and speed in calculations.

Fractions

1. Multiply a unit fraction by an integer

- multiply a unit fraction (e.g., 1/4) by an integer (e.g., 3) and correctly calculate the product (e.g., 1/4 x 3 = 3/4).

2. Multiply a non-unit fraction by an integer

- multiply a non-unit fraction (e.g., 3/5) by an integer (e.g., 4) and ascertain the correct outcome (e.g., 3/5 x 4 = 12/5 or 2 2/5).

3. Multiply mixed numbers by an integer

- mixed numbers (e.g., 2 1/3) by an integer (e.g., 3), managing the conversion to improper fractions if necessary (e.g., 2 1/3 x 3 = 7 x 3/3 = 21/3 = 7).

4. Calculate a fraction of a quantity

- calculating a fraction of a given quantity (e.g., find 1/4 of 200g), including contexts such as weights, lengths, and money.

5. Fraction of an amount

- compute the fraction of an amount, ensuring understanding in both mathematical and real-world contexts (e.g., calculating 1/3 of £60).

6. Find the whole

- determining the whole when given a part and the fraction that the part represents (e.g., if 3/5 of a number is 15, then the whole number is 25).

7. Using fractions as operators

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Byline: The name of the journalist, typically placed beneath the headline. **Opening Paragraph – to include 5Ws:** The opening sentence or paragraph that answers the who, what, where, when, why, and how of the story. **Main Body:** Detailed information and quotes to support the lead, providing context and various perspectives on the event. **Conclusion:** A closing statement that wraps up the report, possibly offering a future outlook or a reflective note. Children will write their newspaper reports based on their learning about Cameron Kelsey, ensuring their work is structured appropriately and captures the essence of the narrative while adhering to a word limit of approximately 150 words. This exercise will enhance their understanding of both the story and the conventions of written English.	• fractions as operators, applying their understanding to solve problems such as finding half or a quarter of a quantity in different contexts.
RE	**PSHE**
<u>People of God</u> **CORE:** • The Old Testament tells the story of a particular group of people, the children of Israel known as the People of God — and their relationship with God. • The People of God try to live in the way God wants, following his commands and worshipping him. • They believe he promises to stay with them and Bible stories show how God keeps his promises. KNOWLEDGE BUILDING BLOCKS PUPILS WILL KNOW THAT: •The Old Testament pieces together the story of the People of God. • The story of Moses and the Exodus shows how God rescued his people from slavery in Egypt; Christians see this story as looking forward to how Jesus' death and resurrection also rescue people from slavery to sin. • Christians apply this idea to living today by trying to serve God and to bring freedom to others; for example, loving others, caring for them, bringing health, food, justice, and telling the story of Jesus.	<u>Too much Selfie isn't Healthy</u> • **Kindness**: showing love for others • When I'm Feeling Lonely… What we can do when we feel lonely • Read My Lips: Listening to what others say • Honour: Thinking of people who deserve honour and suggesting ways to honour them • Great Groups: to investigate the purpose and role of different groups (inc. pressure groups) Be Aware What You Share Developing an awareness of what you should and shouldn't share online (Reflection and self-evaluation)

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Music	PE
Musicianship: - Tempo: 155 bpm (Allegro, fast, quick and bright) -Time Signature: 3/4 (3 crotchets in every bar) -Rhythmic patterns using dotted minims, minims, dotted crotchets, crotchets, quavers and their rests -Key Signature: G major (1 sharp) -Melodic patterns using the notes G A B C D E F# -Improvisation - FGABbCDE **Listen and Respond:** Selection of songs (see overview) **Singing:** Selection of songs (see overview) **Playing:** Glockenspiel/ Recorder - FGABb **Improvising and composition:** FGABbC / 3 notes - FGA **Performing:** Perform and share what has taken place in the lesson	**Teacher Led- Hockey** -Work towards further precision of movement, balance, and coordination with the stick and the ball. -Keep control of the ball whilst moving in different directions with increasing accuracy -Understand how to tackle safely and avoid being tackled - Send and receive a pass successfully and pass into a space or move into a space (building on pace and accuracy from Year 4) -Mark a player and defend -Understand the rules, play multiple positions, and understand defence and attack. **TSC- Invasion in a team (Hockey and Football skills** Pupils will be taught to: use running, jumping, throwing, catching and passing in isolation and in combination as well as play competitive games. Pupils will be taught the ideas behind tactical invasion and how these concepts help towards a common team goal. Pupils will also experience what it is like to win and lose, whilst demonstrating respect and sportsmanship. **Fundamental Movement Skills addressed:** Locomotor- Running, Walking, Hopping, Jumping (height & distance) Body Control- Landing, Stretching, Balancing, Turning, Stopping, Bending, Twisting, Swinging Object Control- Control, Throwing, Catching, Kicking, Bouncing, Rolling, Striking
French	**Computing**
Unit 6 - Quel temps fait-il? weather and seasons **Unit 7 - Combien de paquets?** numbers 31–60	**<u>Programming A – Selection in Physical Computing</u>** ▪ To control a simple circuit connected to a computer ▪ To write a program that includes count-controlled loops ▪ To explain that a loop can stop when a condition is met, e.g. number of times ▪ To conclude that a loop can be used to repeatedly check whether a condition has been met

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	▪ To design a physical project which includes selection ▪ To create a controllable system which includes selection
Connected Curriculum	
Science	
Substantive Knowledge	Disciplinary Knowledge
Heart Dissection **What is the Heart?** The heart is a muscular organ that pumps blood throughout the body. It is about the size of a fist and is located in the thoracic cavity. **External Features of the Sheep Heart** Aorta: The largest artery that carries oxygen-rich blood from the heart to the body. Vena Cava: The large vein that carries deoxygenated blood back to the heart. Pulmonary Arteries and Veins: Carry blood to and from the lungs. Coronary Arteries: Supply blood to the heart muscle itself. **Structure of the Blood Vessels** Aorta: Thick, tough walls to withstand high pressure. Vena Cava: Thinner walls compared to the aorta; more flexible. Texture: Feel robust and strong, especially the aorta, which is more rigid due to its thicker wall. **Blood Flow through the Heart** Blood enters through the vena cava. It moves to the right atrium, passes to the right ventricle. The right ventricle pumps blood to the lungs via the pulmonary arteries. Blood returns from the lungs via pulmonary veins to the left atrium. Finally, it moves into the left ventricle, which pumps it out through the aorta. **Endpoints**	**Scientific Skills** Observation: Carefully examining the heart's structure and observing the blood vessels. Identification: Recognising and naming the different parts of the heart. Comparative Analysis: Comparing the thickness and toughness of different blood vessels. **Safety Procedures** Always wear gloves when handling specimens. Use dissection tools responsibly under the supervision of an adult. Ensure a clean workspace before and after the dissection. **Recording Observations** Use diagrams to label the external features of the heart. Take notes on the texture and thickness of the blood vessels. **Skills and Techniques** Using Models and Diagrams: Create and use models (both physical and digital) to represent the heart and the blood vessels, helping to understand their structure and function. Interactive Software: Engage with interactive simulations to visualise blood circulation and the exchange of gases in the lungs. **Inquiry and Research** Questions to Explore: How does exercise affect the circulatory system? What happens to blood as it travels through the body? Why is the heart sometimes called a 'double pump'?

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1. Identify and name the main external features of the sheep heart and blood vessels.
2. Describe the differences in texture and thickness of the aorta and vena cava.
3. Record observations through diagrams and notes.

Parts of the Circulatory System

Major Components of the Circulatory System

1. The Heart

Structure: The heart is a muscular organ, about the size of a fist, located in the chest between the lungs. It has four chambers: two atria (upper chambers) and two ventricles (lower chambers).

Function: The heart pumps blood throughout the body. It contracts and relaxes in a rhythm, allowing it to push oxygen-rich blood to the tissues and return oxygen-poor blood to the lungs.

2. Arteries

Structure: Arteries are thick-walled blood vessels that carry blood away from the heart. The walls are made of elastic tissue and muscle to withstand high pressure.

Function: They transport oxygen-rich blood from the heart to all parts of the body, except for the pulmonary artery, which carries deoxygenated blood to the lungs.

3. Veins

Structure: Veins are thinner-walled blood vessels than arteries, equipped with valves to prevent backflow. They carry blood towards the heart.

Function: Veins transport deoxygenated blood from various body parts back to the heart, except for the pulmonary veins, which carry oxygenated blood from the lungs.

4. Capillaries

Structure: Capillaries are the smallest blood vessels, with walls just one cell thick, allowing for easy exchange of substances.

Scientific Investigation

Examine an Artificial Blood Sample: In this activity, you will look at an artificial blood sample using a microscope or similar tools. You will observe and identify its layers.

Counting and Identifying Layers: You will learn to layer the blood components while discussing their functions and understanding how to distinguish each type.

Communication and Collaboration

Talking to the School Nurse: Engaging with healthcare professionals can provide additional insights about blood and its significance.

Group Discussions and Presentations: Work with classmates to discuss what you've learned and share findings from your research and observations.

Scientific Processes

Investigating impact: Conduct simple tests, observe, and present findings on the effects of substances.

Critical Thinking: Assess the evidence regarding the risks associated with smoking, drinking, and drug use.

Discussion and Debating: Engage in discussions about making healthy choices and peer pressure.

Food Preparation Skills

Understanding how to follow recipes helps to improve cooking skills and builds confidence in the kitchen:

Measuring Ingredients: Importance of accuracy in cooking.

Chopping and Slicing: Safety skills for using knives.

Cooking Techniques: Boiling, steaming, baking instead of frying.

Recipe Development

Designing a balanced three-course meal using heart-healthy ingredients involves:

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Function: They connect arteries and veins and facilitate the exchange of oxygen, carbon dioxide, nutrients, and waste between the blood and surrounding tissues.

5. Blood

Structure: Blood is a liquid connective tissue made up of red blood cells, white blood cells, platelets, and plasma.

Function: Red blood cells transport oxygen, white blood cells are part of the immune system, platelets help with clotting, and plasma carries nutrients, hormones, and waste products.

6. Lungs

Structure: The lungs are two sponge-like organs in the chest which expand and contract to facilitate breathing.

Function: The lungs allow for gas exchange; they take in oxygen from the air and expel carbon dioxide from the blood. Scatter Graphs

Endpoints

1. Identify and label the main parts of the human circulatory system.
2. Explain the structure and function of the heart, arteries, veins, capillaries, blood, and lungs.
3. Use models and diagrams to demonstrate their understanding.
4. Demonstrate the flow of blood through the circulatory system verbally or in written form.

Components of Blood

What is Blood?

Blood is a vital fluid in the human body that performs multiple essential functions such as transporting oxygen, nutrients, hormones, and waste products. It has several components each playing a crucial role.

Components of Blood

Combining flavours and textures.
Ensuring proper nutritional balance across courses.

Scientific Method Steps

Question: How does heart rate change due to different activities?
Hypothesis: Form a prediction about which activity will cause the greatest heart rate change.
Experiment:
Measure resting heart rate.
Conduct activities (exercise, anxiety-inducing situations, relaxation techniques).
Record heart rate using data loggers or pulse points.
Analyse Data: Display results in tables, graphs, or charts.
Conclusion: Determine which activity caused the biggest change in heart rate and how quickly the heart rate returns to resting level.

- BBC Bitesize - The Heart
- National Geographic - How the Heart Works
- Science Kids - The Heart
- BBC Bitesize - The Circulatory System
- National Geographic Kids - The Heart
- How Stuff Works - How Your Heart Works
- Scholastic - Circulatory System Facts
- NHS - Blood Components
- BBC Bitesize - The Heart and Blood
- National Geographic Kids - The Human Body
- Khan Academy - Blood
- NHS Smoking, Drinking, and Drugs
- Understanding Alcohol
- Drugs Information
- Health Risks of Smoking
- NHS Eat Well
- British Nutrition Foundation
- Change4Life Recipes

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Plasma Description: The liquid part of blood, comprising about 55% of its volume. Function: Transports nutrients, hormones, and proteins to the parts of the body that need it. Carries waste products to kidneys for excretion. Helps maintain blood pressure and blood volume. **Red Blood Cells (Erythrocytes)** Description: Biconcave discs that contain a protein called haemoglobin. Function: Transport oxygen from the lungs to the body tissues. Carry carbon dioxide back from the tissues to the lungs. **White Blood Cells (Leukocytes)** Description: Cells of the immune system that are involved in protecting the body against infections. Function: Fight off infections by identifying and destroying pathogens. Produce antibodies that help to build immunity. **Platelets (Thrombocytes)** Description: Small cell fragments that play a critical role in blood clotting. Function: Help stop bleeding by clumping and clotting blood vessel injuries. Release chemicals that help the blood to clot. **End Points** 1. Identify and describe the main components of blood. 2. Explain the functions of each component.	• Food a Fact of Life • Science Buddies: What is Pulse?

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3. Conduct a basic investigation of an artificial blood sample.
4. Collaborate and communicate findings clearly with peers.
5. Demonstrate an understanding of how blood maintains health and supports bodily functions.

Unhealthy Substances

What is Smoking?

Smoking involves inhaling the smoke of burning tobacco, which contains harmful chemicals.

It can lead to serious health problems, including lung cancer, heart disease, and respiratory issues.

What is Alcohol?

Alcohol is a legal drink that can impair judgment and coordination.

Consuming too much alcohol can lead to addiction, liver problems, and affect mental health.

What are Drugs?

Drugs can be legal (like prescription medications) or illegal (like heroin or cocaine).

They affect the brain and body, leading to changes in mood, perception, and behaviour.

The Effects on the Body

Effects of Smoking on the Heart:

Increases heart rate and blood pressure.

Narrows blood vessels, which can lead to heart attacks.

Effects of Alcohol on the Body:

Dehydration and disrupts normal bodily functions.

Long-term effects can damage organs, especially the liver and heart.

Effects of Illegal Drugs on the Body:

Can cause hallucinations, heart problems, and mood swings.

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Risk of overdose, which can be fatal.

Endpoints

1. Understand the risks of smoking, alcohol, and drugs.
2. Be able to articulate how these substances can impact the human body and interpersonal relationships.

Heart Healthy Foods

1. Fruits and Vegetables

Importance: Rich in vitamins, minerals, and fibre. They help reduce cholesterol and maintain a healthy weight.

Examples: Apples, carrots, broccoli, spinach, berries.

2. Whole Grains

Importance: Provide energy and help maintain a healthy digestive system. They are beneficial for heart health.

Examples: Brown rice, whole wheat pasta, oats, quinoa.

3. Lean Proteins

Importance: Essential for growth and repair of tissues, while being low in saturated fats.

Examples: Chicken breast, fish (like salmon), beans, lentils.

4. Healthy Fats

Importance: Necessary for cell growth and overall health, unsaturated fats are heart-healthy when consumed in moderation.

Examples: Avocados, nuts, seeds, olive oil.

5. Dairy or Dairy Alternatives

Importance: Provide calcium and vitamin D, important for bone health. Choose low-fat options when possible.

Examples: Low-fat milk, yoghurt, cheese, plant-based alternatives like almond milk.

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Endpoints

1. Identify and classify foods into their respective groups.
2. Understand the health benefits of a balanced diet for heart health.
3. Prepare a simple three-course heart-healthy meal by following recipes.
4. Demonstrate safe cooking practices and understand basic cooking techniques.

Acceleration and Deceleration

What is Heart Rate?

Definition: Heart rate is the number of times your heart beats in one minute (bpm).

Importance: It reflects how hard your heart is working and can indicate your fitness level.

Factors Affecting Heart Rate

Exercise: Physical activity increases heart rate to supply more oxygen to your muscles.

Anxiety: Stressful situations can lead to a rise in heart rate due to adrenaline.

Relaxation: Activities like deep breathing can lower heart rate, promoting calmness.

Normal Resting Heart Rate

Definition: The heart rate when you are at rest, not engaged in any physical activity.

Average for Children (Age 5-12): Typically between 70-120 bpm.

Endpoint

1. Describe what heart rate is and how it can change.
2. Conduct an experiment measuring heart rates under different conditions.
3. Analyse and present data in a clear and organised manner.
4. Reflect on personal experiences and how they relate to scientific concepts.

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History	
Substantive Knowledge	Disciplinary Knowledge
Willian Harvey **Timeline of William Harvey** 1578: William Harvey is born in Folkestone, England. 1607: Harvey graduates from the University of Padua in Italy. **1628:** Harvey publishes his book 'An Anatomical Study of the Motion of the Heart and of the Blood in Animals,' explaining his discovery of circulation. **Interesting Facts:** William Harvey was the first person to describe completely and accurately how blood was pumped around the body by the heart. Harvey's work revolutionised the understanding of the circulatory system and laid the foundation for modern medicine. He was physician to both King James I and King Charles I of England. Harvey was a pioneer in the field of anatomy and physiology, making significant contributions to medical science. **Endpoints:** By the end of the topic, students should know: 1. Who William Harvey was and his contributions to the field of medicine. 2. The importance of Harvey's discovery of circulation. 3. The key terms related to the circulatory system, such as arteries, veins, and capillaries. 4. The timeline of events in Harvey's life and the publication of his ground-breaking book.	**Skills Development in History** Use of Historical Sources: Pupils should be able to examine a variety of sources, such as Harvey's writings (e.g., 'De Motu Cordis'), pictures, or artefacts, and understand how these sources provide information about the historical periods in which they were produced. Analytical Thinking: Students should be able to compare and contrast different types of information and viewpoints from the past, forming reasoned judgments about the past based on evidence. **Understanding the Legacy** Evaluate Harvey's Legacy: Students should evaluate the long-term implications of Harvey's discoveries on both the medical profession and society at large, understanding how one individual's contributions can have a widespread impact. Connection to Modern Medicine: Pupils should make connections between Harvey's work and current understanding of human anatomy and medical practices, recognising continuity and change in medical history. **Communicating Historical Knowledge** Presentation Skills: Pupils should be able to clearly communicate their knowledge and understanding of William Harvey through various forms, including written pieces, presentations, or creative projects. Debating Historical Impact: Students should engage in discussions and debates on the significance of Harvey's contributions, using appropriate historical language and evidence-based arguments.
	• BBC Bitesize - William Harvey • National Geographic Kids - William Harvey • The Royal College of Physicians - William Harvey

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