Year 4 Curriculum Term 2

Topic Title: Mighty Metals	
English	**Maths**
Fiction – Suspense Stories Pupils write suspense stories using the Talk for Writing Text, The Manor House. They learn to use the following tools to enhance their writing: - Let the threat get closer and closer - Show the character's feelings by reactions, eg. She froze - Include short punchy sentences for drama - Use rhetorical questions to make the reader worried eg. Who had turned out the light? - Use empty words to hide the threat- somebody, something, a silhouette - Select powerful verbs- crept , grabbed, smothered. - Use dramatic connectives – in an instant, without warning, out of the blue They revise and edit their stories, then finally publish them. **Non-fiction** **Writing Explanation Texts** Pupils write explanation texts based on the Talk for Writing model text, 'The Teacher Pleaser Machine,' by Pie Corbett. Pupils learn to use the following causal connectives to ensure their writing flows: - When… - Because… - So.. - Since… - Therefore, … - This allows … , - This enables,… - … was caused by … - Consequently …	**Measure – Area** **1. Understanding the Concept of Area** • Define area as the measure of the amount of space inside the boundary of a flat (2-dimensional) object. • Understand that area is measured in square units, such as square centimeters (cm^2), square meters (m^2), and so forth. **2. Counting Squares to Measure Area** • Measure areas by counting unit squares (square cm, square m). • Understand that the total area of a shape can be determined by the number of these squares it takes to cover, without gaps or overlaps. **3. Creating Shapes with a Given Area** • Use tiles or other manipulatives to create shapes with a specific area. • Explore multiple possibilities for a shape's dimensions that still maintain the same area (e.g., 4 tiles arranged in a 2x2 square or a 1x4 rectangle). **4. Comparing Areas** • Compare the area of different shapes by counting unit squares. • Determine if one shape has a larger, smaller, or equal area to another using direct comparison (by overlaying or adjacent placing) and indirect methods (using counting or calculation). **Multiplication and Division** **1. Multiples of 3** • Identify and list multiples of 3 up to 36 (3, 6, 9, … , 36). • Apply understanding of multiples to solve simple word problems. **2. Multiply and Divide by 6**

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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- This results in, …

Pupils also use the revise and editing in their non fiction writing and finish the unit by publishing their work.

Reading

The whole class reading text is called ' The Boy, the Bear and the Boat,' and pupils will learn key skills such as summarising , predicting, character development and retrieval.

- Multiply whole numbers by 6 using mental strategies and formal written methods.
- Divide numbers by 6 (where the dividend is not greater than 72) and understand the relation with multiplication.

3. Mastery of 6 Times-table and Division Facts

- Recall and use multiplication and division facts for the 6 times-table rapidly and with accuracy.
- Demonstrate understanding through applications in various problem-solving scenarios.

4. Multiply and Divide by 9

- Multiplication of numbers by 9 using patterns observed in the 9 times-table, e.g., 9 x 5 = 45.
- Division of numbers by 9, ensuring clear understanding of related multiplication facts.

5. Mastery of 9 Times-table and Division Facts

- Quickly recall all multiplication and corresponding division facts for 9 up to 90.
- Solve challenges and tasks that involve elements of these facts.

6. Mastery of 3-, 6- and 9-Times Tables

- Rapidly recall and use multiplication and division facts for 3, 6, and 9 times-tables.
- Employ this knowledge in solving complex mathematical problems including those involving multiple steps.

7. Multiply and Divide by 7

- Successfully multiplying numbers up to 12 by 7 using efficient methods.
- Dividing numbers up to 84 by 7 with an emphasis on using inverse operations.

8. Mastery of 7 Times-table and Division Facts

- Recall quickly and accurately all facts up to 7 x 12.

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	• Employ these facts in a variety of contexts and mathematical challenges. **9. Mastery of 11 Times-table and Division Facts** • Be able to multiply and divide facts quickly for the 11 times-table up to 132. • Apply these skills in problem-solving that require deeper thinking and multi-step processes. **10. Mastery of 12 Times-table and Basic Multiplicative Identity** • Understand and recall multiplication facts for the 12 times-table. • Comprehend and apply the multiplicative identity involving multiplication by 1 and 0 to check calculations and solve problems. **11. Division using Identity Properties** • Dividing any number by 1 and identifying that it remains unchanged. • Understand and apply the principle of dividing numbers by themselves to yield the quotient as 1. **12. Multiply Three Numbers** • Ability to multiply three single-digit numbers with fluency. • Apply this skill to solve word problems that require multi-step operations. **13. Rapid Recall of Division Facts** • Demonstrate quick and correct recollection of division facts related to the covered multiplication tables. • Utilize these division facts proficiently in mathematical problems and real-world scenarios.
RE	**PSHE**
Incarnation CORE: •Identify John 1 as part of a 'Gospel', noting some differences between John and the other Gospels. •Offer suggestions for what texts about God might mean.	<u>Don't Forget to Let Love In</u> • **Courage** and showing love through actions • Heart to heart: Looking at ways we feel loved • Brilliant me ball: Celebrating our strengths and achievements

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•Give examples of what the texts studied mean to some Christians. •Describe how Christians show their beliefs about God the Trinity in the way they live. •Make links between some of the texts and teachings about God in the Bible and what people believe about God in the world today, expressing some ideas of their own clearly. **KNOWLEDGE** **BUILDING BLOCKS** PUPILS WILL KNOW THAT: Christians believe God is Trinity: Father, Son and Holy Spirit. • Christians believe the Father creates; he sends the Son who saves his people; the Son sends the Holy Spirit to his followers. • Jesus, the Son of God, is seen by Christians as revealing what God the Father is like. • Understanding God is challenging; people spend their whole lives learning more and more about God. • Christians believe the Holy Spirit is God's power at work in the world and in their lives today, enabling them to follow Jesus	• Don't agree with I don't like me: Highlighting things about our bodies we are grateful for • Hands up! Creating a catchy rhyme/song or rap to remind others about the importance of hand Washing • Reflection and self-evaluation
Music	**PE**
Musicianship: -Tempo: 97 bpm (Andante, a walking pace) -Time Signature: 2/4 (2 crotchets in every bar) -Simple rhythmic patterns using minims, dotted crotchets, crotchets, quavers, semiquavers and their rests -Key Signature: F major (1 flat) -Simple melodic patterns using the notes F G A -Improvisation - CDEGA **Listen and Respond:** Selection of songs (see overview) **Singing:** Selection of songs (see overview) **Playing:** Glockenspiel/Recorder -CDEFG/ F#GABC (4 levels) **Improvising and composition:** 1,2,3 and 5 notes -CDEGA /GAB/DEF **Performing:** Perform and share what has taken place in the lesson	**Teacher Led – imoves Dance** **Ancient Romans, Stonehenge** To be able to perform basic movements to music, and to build a simple themed dance focusing on Roman Gladiators and building Stonehenge -Create and develop new movements to include: travelling, turning, jumping, balance, levels and using different planes of movement within a specific style. -Combine skills to consistently demonstrate flexibility, strength, technique, control and balance. -Move in time to the music demonstrating confidence with more complex rhythm and phrasing. -Create and express imaginative ideas in a specific style -Work co-operatively with a group to achieve good synchronicity throughout the whole performance.

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	TSC- Gymnastics Pupils should be taught to develop flexibility, strength, technique, control and balance through gymnastics. **Fundamental Movement Skills addressed:** Locomotor- Running, Walking, Hopping, Jumping (height & distance), Leaping Body Control- Landing, Stretching, Balancing, Turning, Stopping, Bending, Twisting, Swinging Object Control- Control
French	**Computing**
Unit 11- Trente et un invites numbers 21–31, family members **Unit 12 - Quelle est la date de ton anniversaire?** months of the year, saying and asking when your birthday is	<u>Creating Media – Audio Production</u> ▪ To identify that sound can be digitally recorded ▪ To use a digital device to record sound ▪ To explain that a digital recording is stored as a file ▪ To explain that audio can be changed through editing ▪ To show that different types of audio can be combined and played together ▪ To evaluate editing choices made
Connected Curriculum	
Science	
Substantive Knowledge	Disciplinary Knowledge
Sorting and Classifying **Key Forces** Push: A force applied in a direction away from the object. Example: Pushing a swing. Pull: A force applied towards the object. Example: Pulling a slide down to sit on it. Gravity: The force that pulls everything towards the Earth. It makes objects fall. Example: A child sliding down a slide.	**Sorting and Classifying Forces** Contact Forces: Forces that occur when objects touch each other. Examples from playground apparatus include push and pull actions. Non-contact Forces: Forces that occur without direct contact. Gravity fits into this category, influencing how everything interacts on the playground. **Exploring Motion** Why does a roundabout slow down when it is no longer pushed?

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Friction: The force that opposes motion between two surfaces. It slows things down.
Example: The friction between slide and a child's clothes.

Endpoints

1. Understand key concepts of forces: push, pull, gravity, and friction.
2. Identify and classify various playground apparatus based on the forces they require.
3. Discuss how and why forces affect the movement of various pieces of playground equipment.

Slip and Slide

Friction: The resistance that one surface or object encounters when moving over another. It can slow down objects.
Sliding Speed: The rate at which an object moves down a slide. It can vary depending on the material in contact with the object.
Surface Texture:
Smooth Surfaces: Have less friction, allowing objects to slide faster.
Rough Surfaces: Have more friction, causing objects to slide slower.
Materials: Various materials can affect friction differently. Common materials include:
Plastic
Cloth
Rubber
Paper
Metal

Endpoint

1. Understand how different materials affect sliding speed.
2. Identify the relationship between surface texture and friction.
3. Conduct a simple scientific experiment using fair testing methods.
4. Record, analyse, and present data in a clear format.

The roundabout begins to slow down due to friction between it and the ground. Friction opposes motion and, without the continuous push, the energy starts to dissipate, making it lose speed.
What would happen if a slide were horizontal?
If a slide were horizontal, gravity would not help the child slide down as gravity pulls directly down, not sideways. Thus, it is likely the child would not slide unless an additional force (like a push) were provided

Scientific Method

Ask a Question: How do different materials affect the speed of an object sliding down a slide?
Make a Hypothesis: Predict which material will allow the object to slide the fastest and why.
Conduct an Experiment: Set up a fair test to investigate your hypothesis.
Collect Data: Measure the time it takes for the object to slide down with different materials.
Analyse Results: Compare the times and evaluate your hypothesis.
Draw Conclusions: Summarise what you learned about the materials and their effects on sliding speed.
Fair Testing
To ensure a fair test:
Use the same object each time.
Use a slide with a consistent incline.
Make sure the length of the slide is the same.
Conduct each test under similar conditions.

Collaboration: Work in pairs or small groups. Share ideas and help each other.
Observation: Carefully look around the school for different objects that may be magnetic.

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Magnetic Object Hunt

What is Magnetism?

Magnet: An object that can attract or repel certain materials like iron, nickel, and cobalt.
Magnetic Objects: Items made from materials that can be attracted to a magnet.
Non-Magnetic Objects: Items made from materials that cannot be attracted to a magnet (e.g., wood, glass, plastic).

Endpoint

1. Identify and list 20 magnetic objects from around the school.
2. Explain what each object is made from and its properties.
3. Present your findings clearly in tables or charts.
4. Understand the science behind magnets and magnetic materials.

Investigating Magnets

Force Meter: A tool used to measure the force exerted by a magnet in newtons (N).
Average Force: The sum of all measured forces divided by the number of measurements taken.
North or South?

Endpoints

1. Successfully measure and record the strength of different magnets.
2. Calculate the average force of each magnet accurately.
3. Communicate results clearly, using tables and conclusions drawn from data.

North and South

Every magnet has two poles: the North Pole and the South Pole.
Opposite poles attract each other (North attracts South), while like poles repel each other (North repels North and South repels South).

Types of Magnets

Bar Magnets: Rectangular shape; used for demonstrating basic magnetic properties.
Horseshoe Magnets: U-shaped magnets; provide a stronger magnetic field, ideal for exploring magnetic poles.

Research: Use the internet and books to find out what materials the objects are made from.
Data Collection: Collect and organise your findings using tables or charts.
Endpoint

Hypothesis: Formulate a prediction about which magnet will be the strongest before testing.
Experiment Design: Plan how to conduct the experiment fairly, including ensuring that you use the same distance from the magnetic material each time.
Data Collection: Record results in a table to make analysis easier.
Calculation: Learn how to find the average force by adding all the measured forces and dividing by the number of measurements.

Scientific Inquiry Skills

Investigating: Conduct experiments using different magnets and iron filings to observe patterns.
Comparing: Look at different magnet shapes and how they affect the magnetic field patterns formed.
Describing: Use scientific vocabulary to explain findings and describe observations.

Observational Skills

Record the observations made with careful attention to detail. Note how the different shapes of magnets affect the distribution of iron filings.

Hypothesis Formation: Students will predict how the chosen independent variable will affect the distance travelled by the cart. For example, they might hypothesise that "a steeper ramp will make the cart travel further."
Data Collection: Students will need to measure the distance travelled using a ruler or tape measure and record their results accurately.

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Other Magnet Shapes: Include disc magnets, cylinder magnets, and ring magnets; each shape exhibits unique magnetic properties.

Magnetic Fields

A magnetic field is the area around a magnet where magnetic forces can be felt.
The pattern of the magnetic field can be visualised using iron filings or ferrofluid.

Endpoints

1. Identify and label the north and south poles of different magnets accurately.
2. Observe, describe, and compare the patterns formed by various magnets using iron filings and/or ferrofluid.
3. Use appropriate scientific vocabulary when discussing their observations and findings.

Time for a Fair Test

Fair Test: A fair test is an experiment where only one variable is changed at a time while all other conditions remain the same. This ensures that the results are valid and reliable.

Variables:

Independent Variables: The factors that you change in the experiment.
Length of the ramp (e.g., 1 metre, 2 metres, 3 metres)
Angle of the ramp (e.g., 30°, 45°, 60°)
Material of the ramp (e.g., wood, plastic, metal)
Dependent Variable: The factor that you measure in the experiment.
Distance the cart travels when released from the ramp.
Controlled Variables: Factors that must be kept the same to ensure a fair test.
The weight of the cart
The surface on which the cart lands
Starting position of the cart (always released from the same height)

Endpoints

1. Understand the concept of a fair test and its importance in scientific experiments.
2. Identify and explain independent, dependent, and controlled variables.

Analysis: After conducting the experiment, students will compare their results to see which ramp conditions allowed the cart to travel the furthest.
Conclusions: Students will draw conclusions based on their data, reflecting on their hypothesis and suggesting improvements for future experiments

Observation: Look at the appearance, colour, and texture of metals.
Testing: Use simple tests to see how metals conduct heat and electricity.
Research: Use reliable sources (books, websites) to gather information about metals.
Class Discussion: Share findings and experiences with different metals, considering their properties and uses.

- BBC Bitesize - Forces and Motion
- Primary Homework Help - Forces
- Science Kids - Forces and Motion
- Primary Science - Investigations
- Touching on Magnets - BBC Bitesize
- What are Magnets? - Science Kids
- National Geographic Kids - Magnets
- BBC Bitesize - Forces and Magnets
- National Geographic Kids - Magnets
- Science Kids - Magnet Experiments
- BBC Bitesize Science: Forces and Motion
- Science Buddies: Fair Testing
- Primary Science Teaching Trust: Investigative Science
- BBC Bitesize - Materials
- National Geographic Kids - Materials
- Science Direct - Metals and Their Properties
- Primary Resources - Teaching Resources for Metals

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3. Conduct an experiment methodically, ensuring that conditions remain consistent.
4. Collect, record, and present data visually (e.g., using charts or tables).
5. Draw conclusions based on evidence gathered through experimentation.

Magnificent Metals

Common Metals and Their Properties

Iron
Properties: Strong, durable, magnetic, rusts.
Uses: Construction, tools, automotive parts.

Brass
Properties: Copper and zinc alloy, corrosion-resistant, gold-like appearance.
Uses: Musical instruments, plumbing, decorative items.

Copper
Properties: Excellent conductor, malleable, develops patina.
Uses: Electrical wiring, plumbing, cookware.

Mercury
Properties: Liquid at room temperature, high density, toxic.
Uses: Thermometers, barometers, electrical switches.

Aluminium
Properties: Lightweight, corrosion-resistant, strong.
Uses: Packaging, aircraft, construction.

Gold
Properties: Malleable, does not tarnish, valuable.
Uses: Jewellery, electronics, awards.

Silver
Properties: Highly conductive, resistant to corrosion, lustrous.
Uses: Jewellery, photography, electronics.

Tin
Properties: Soft, malleable, corrosion-resistant.
Uses: Coating for cans, soldering, toys.

Lead

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Properties: Dense, soft, toxic. Uses: Batteries, radiation shielding, formerly in paints. **Endpoints** 1. Identify different types of metals and their common properties. 2. Describe various uses of metals based on their properties. 3. Conduct simple investigations to observe properties of materials.	

Art

Substantive Knowledge	Disciplinary Knowledge
Embossing Foil **Creating Embossed Patterns**: Students will learn how to use tools such as embossing stylus, brayer, and texture plates to create raised designs on foils. **Choosing Coloured Foils:** Students will experiment with different coloured foils to enhance their designs and understand the impact of colour on their artwork. **Design Exploration:** Encourage students to explore various designs and patterns by combining different tools and techniques. **Adapting Artwork:** Students will refine their designs by adding depth, contrast, and texture to their embossed patterns. **Endpoints** 1. Create embossed patterns on different coloured foils using a range of tools. 2. Demonstrate an understanding of using varying pressure to create different designs. 3. Experiment with textures and tools to create unique artwork.	**Tool Techniques** Embossing Stylus: Use to create fine lines and detailed patterns Brayer: Roll over foil to create a smooth and consistent texture Texture Plates: Press onto foil to add intricate designs and textures **Colour Theory** Discuss how different colours can evoke different emotions and moods in the artwork Encourage students to experiment with complementary and contrasting colour combinations • The Artful Parent • Tate Kids - Make an Embossed Metal Tile • Activity Village - Foil Embossing

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Design and Technology	
Substantive Knowledge	Disciplinary Knowledge
Spinners Understanding of materials used in making spinners (e.g., cardboard discs, cocktail sticks, pencils). Understanding the concept of friction and how different surfaces affect the spinning duration of a spinner. Knowledge of the properties of different materials and how they influence the spinning performance of a spinner. Recognising the importance of the shaft's end shape (sharp or blunt) on the spinning ability of the spinner. **Endpoints** 1. Design and create a variety of spinners using cardboard discs. 2. Investigate which material produces the best spinning performance. 3. Evaluate how different surfaces affect the spinning duration. 4. Determine whether a sharp or blunt shaft end improves spinner performance.	**Designing:** Create a design plan for the spinner, considering materials and shapes. **Constructing:** Assemble the spinner using cardboard discs and a shaft (cocktail stick or pencil). **Testing:** Trial the spinner on various surfaces to observe differences in spinning duration. **Evaluating:** Assess and compare the performance of different spinners to determine the best material and shaft type. **Modifying:** Make adjustments to the spinner design based on evaluation results to improve spinning performance. • BBC Bitesize - Design and Technology • STEM Learning Resources - Design and Technology