

# **KS3 Maths & Finance Teaching and Learning Framework**

# <u>Intent</u>

Our students will enjoy developing their numeracy skills and take satisfaction in problem solving. We place emphasis on the mathematical process rather than the final answer, placing value on learning from mistakes and building on prior learning. Pupils will leave us understanding that maths is in the world around us and does not solely take place in the classroom.

Our maths curriculum will ensure that pupils are able to apply their mathematical skills to the world around them , ensuring they are as fully prepared for adulthood as possible.

# <u>Rationale</u>

Mathematics plays a crucial role in our everyday lives, providing us with the tools to understand and engage with the world around us. It nurtures the natural ability of students to think logically, solve puzzles, and apply these skills to real-life problems. Our goal is to foster creative thinking and establish connections between mathematical concepts by exploring patterns in numbers, shapes, measurements, and statistics. Through the principles of fluency, reasoning, and problem-solving, we aim for our students to not only explain their reasoning but also justify their answers. This development will equip them with the necessary skills, knowledge, and efficient calculation methods to succeed economically and solve daily challenges. Mastering mathematics will be instrumental in preparing our students to confidently and resiliently navigate their transition to college or the workforce.

To ensure comprehensive learning, we have designed a spiral curriculum that allows our students to revisit topics and areas multiple times throughout their academic journey. Running through the framework there will be a focus on students ability to solve problems mentally whenever possible. With each revisit, the complexity of the subject matter increases, while maintaining connections with prior learning and placing it in context. This approach offers numerous benefits as it reinforces and strengthens



information and learning each time a topic is revisited. It enables a logical progression from basic concepts to more advanced ones. Additionally, students are encouraged to apply their foundational knowledge to achieve later learning objectives.

	Cycle One					
	Autumn 1		Autumn 2			
Place Value & Four Operations				Number 1		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing	
Understanding Addition - Recognize and count objects and actions to understand addition as combining groups. Understanding Subtraction - Identify situations	Understanding Place Value (1-100): - Students will learn to identify the value of digits in numbers up to 100 and understand the	Understanding Place Value (1-1000) - Identify the value of digits in numbers up to 1000. - Recognize the importance of the position of digits in a	Identifying Simple Number Patterns: - Recognize basic number patterns in number - Extend and predict simple patterns in numerical sequences, like adding the same	Introduction to Number Patterns: - Students will be introduced to recognizing and describing number patterns in sequences, with a focus on grithmetic	Identifying Number Patterns: - Recognize and describe number patterns in sequences, including arithmetic and geometric patterns. - Extend and predict patterns in numerical sequences. Writing Numbers as Words:	
where subtraction is needed, such as taking away objects.	significance of digit positions within a number. Ordering	number. - Add and subtract numbers using the vertical column	number repeatedly. Writing Whole Numbers as Words: - Develop the ability	and geometric patterns. Writing Numbers in Words:	<ul> <li>Develop the skill to express numbers in word form, including whole numbers and decimals.</li> <li>Practise converting numerical expressions to written words</li> </ul>	
Multiplication - Explore multiplication	Numbers (Up to 1000): - Students will	method Ordering Numbers	to express whole numbers in word form.	- Learners will develop the foundational skill of	accurately. Understanding Odd and Even	



_	begin to arrange	(Up to 1000)		· · · · · · · · · · · · · · · · · · ·	
	numbers in	- Arrange numbers	Halving and Doubling	expressing numbers in word form,	Numbers: - Differentiate between odd
Introduction to Division	ascending and	in ascending and	(Numbers up to 20):	including whole	and even numbers.
- Understand division as	descending order	descending order up	- Practice halving	numbers and simple	- Identify the properties and
sharing or grouping	up to 1000 and	to 1000.	and doubling small	decimals.	characteristics of both odd and
	gain proficiency in	- Compare and	numbers efficiently.		even numbers.
- Divide a small set of	comparing and	place numbers	- Apply halving and	Exploring Odd and	- Identify basic properties of odd
	placing numbers	correctly on a	doubling techniques	Even Numbers:	and even numbers, like "odd
	correctly on a	number line.	for mental calculations	- Students will	numbers end in 1, 3, 5, 7, or 9."
	number line.		with numbers up to 20.	differentiate	
·		Multiplication	·	between odd and	Introducing Negative
Recognizing Symbols	Introduction to	Timetables		even numbers and	Numbers:
	Multiplication:	- recall	Making Sensible	identify basic	- Explore the concept of
2	- Learners will	multiplication facts	Guesses with	properties and	negative numbers and their
	recall	for times tables up to	Rounding:	characteristics of	placement on the number line.
multiplication (x), and	multiplication facts	10 x table	- Learners will	these types of	- Understand operations
	for times tables up	- Solve	hopefully be able to	numbers.	involving negative numbers (e.g.,
- Associate these	to 5 x table and	multiplication	grasp the idea of		addition, subtraction).
symbols with their	solve	problems involving a	rounding numbers as a	Introduction to	
respective operations.	multiplication	3 digit and a 2 digit	way to make sensible	<b>Negative Numbers:</b>	Rules for Addition, Subtraction,
	problems involving	number.	guesses.	- Learners will	Multiplication, and Division:
	a two-digit number		-They should	explore the concept	- Learn and apply rules for
- Recall basic addition	multiplied by a	Long Multiplication	understand that	of negative numbers	performing addition, subtraction,
and subtraction facts for	single-digit	- Perform long	rounding makes	and their placement	multiplication, and division
numbers 0-5.	number.	multiplication using	numbers easier to	on the number line,	operations.
- Begin to use these		the grid method with	work with and helps in	without delving into	- Understand the order of
facts to solve simple	Introduction to	3 digit by 2 digit.	making quick and	complex operations.	operations and apply them
maths problems	Long	- , -	reasonable estimations		appropriately.
·	Multiplication:	<b>Division Using</b>	in simple everyday	<b>Basic Rules for</b>	
	- Students will be	Written Methods	situations, like	Arithmetic	Halving and Doubling:
	introduced to long	- Learn various	guessing the number	<b>Operations:</b>	- Practice halving and



multiplication using the grid method with a two-digit number by a one-digit number.	methods for performing division (eg repeated subtraction) - Introduce the "bus stop" method for	of candies in a jar or the cost of a small toy. -Students should feel confident using rounding to make sensible and	- Students will learn and apply basic rules for addition, subtraction, multiplication, and division, with an	doubling larger numbers efficiently. - Apply halving and doubling techniques for mental calculations.
	long division.	approximate guesses.	introduction to the	Understanding BIDMAS (Order
Division:	long arrieren	approximate gacceee	order of operations.	of Operations):
- Learners will			order of operations.	- Familiarise with the BIDMAS
explore basic	<b>Recognizing Coins</b>		Halving and	acronym (Brackets, Indices,
methods for	and Notes:		Doubling Numbers:	Division and Multiplication,
performing	- Identify and		- Learners will	Addition and Subtraction).
division, such as	distinguish various		practise halving and	- Apply the order of operations
repeated	coins and notes,		doubling numbers for	to solve complex mathematical
subtraction.	including their		simple mental	expressions.
Subfruenon	denominations and		calculations.	Introduction to Factors:
Making Amounts	unique features.		calculations.	- Recognize factors as numbers
with Money:	- Recognize the		Introduction to	that can divide evenly into
- Students will	monetary value		Rounding Numbers:	another number.
practise	associated with each		- Students will	- Identify factors of simple
constructing	coin and note.		understand the	numbers up to 25 without
specific monetary	- Apply this		fundamental concept	complex calculations.
amounts using a	knowledge during a		of rounding numbers,	
combination of	visit to a local		particularly to the	Introduction to Multiples:
coins and notes,	supermarket,		nearest ten for	- Understand multiples as
considering	identifying the		smaller numbers.	numbers that can be obtained by
different	currency used in		They will practise	counting forward from another
denominations,	transactions.		using rounding for	number.
and making			simple estimations in	- Find the first few multiples of
purchases with the	Making Amounts		everyday situations.	numbers up to 10 through
appropriate	with Coins and			counting.



currency.	Notes:		
	- Construct specific		Identifying Prime Numbers
Money and	monetary amounts		to 20):
Decimals:	using a combination		- Define prime numbers as
- Learners will	of coins and notes,		numbers that have exactly tw
begin to	considering different		factors: 1 and themselves.
understand the	denominations.		- Recognize prime numbers
connection	- Demonstrate the		within a specified range from
between money	ability to form		to 20.
and decimals,	amounts accurately		
recognizing that	and efficiently.		
cents represent	- Practise making		
parts of a whole	purchases and		
dollar and starting	paying for items at		
to use decimal	the local		
notation in dealing	supermarket using		
with monetary	the appropriate		
amounts.	currency.		
Calculating Totals	Introduction to		
with Money:	Money as an		
- Students will	Introduction to		
learn to calculate	Decimals:		
the total cost of	- Understand the		
items, apply	connection between		
addition skills to	money and decimals		
find the sum of	by recognizing that		
multiple items, and	cents represent parts		
create and	of a whole dollar.		
manage a	- Begin to use		
shopping list	decimal notation		



during a simulated	when dealing with		
shopping scenario.	monetary amounts,		
	such as		
Calculating	understanding that		
Change:	£1.50 can be		
- Learners will	represented as 1.50		
develop skills in	pounds.		
determining			
change after	Calculating Totals		
making a	with Money		
purchase, counting	(Including Real-Life		
and providing	Scenarios):		
change using coins	- Calculate the total		
and notes, and	cost of items when		
practising these	given a list of prices		
skills during	and quantities,		
shopping	simulating real-life		
scenarios.	shopping scenarios.		
Budgeting and	- Apply addition		
Decision-Making:	skills to find the sum		
- Students will	of multiple items,		
receive an	considering both the		
introduction to	value of coins and		
making informed	notes.		
decisions while	- Use these skills to		
shopping, setting a	create and manage		
basic budget, and	a shopping list		
making choices	during the		
within budget constraints.	supermarket visit.		
constraints.	Calculating Change:		
	Culculuting Change:		



Practical Application of Money Skills: - Students will apply money skills acquired during simulated shopping experiences to real-life situations, such as grocery shopping and everyday transactions, gaining practical experience in managing money and making purchases.	<ul> <li>Determine the change to be received after making a purchase by subtracting the total cost from the amount paid.</li> <li>Accurately count and provide change using a combination of coins and notes.</li> <li>Practice giving and receiving change during the supermarket visit when making purchases.</li> <li>Budgeting and Decision-Making:         <ul> <li>Learn to make informed decisions when shopping by comparing prices, evaluating quality,</li> </ul> </li> </ul>		
	when shopping by		
	personal preferences. - Set a budget for a shopping trip and make choices that fit within the budget		



experie and af supern Practic Applic	nces during er the arket visit.
budge decisio experie and af	ect on ing and n-making nces during er the



Ge	ometry & Measure		Number 2		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Using a Ruler to Measure Lines: -Introduce learners to the concept of measurement using a ruler. Help them understand how to place a ruler alongside an object or line and count the units to find its length. Focus on measuring lines of different sizes in a hands-on and practical manner. Identifying Straight Lines: -Teach learners to recognize and distinguish straight lines from other shapes and objects. Use everyday examples, such as the edges of a book or the sides of a door, to help them identify and understand the characteristics of straight	Introducing 2D Shapes: -Pupils will be able to tell common 2d shapes apart by looking at their special features, such as how many sides and corners they have. Introducing Properties of 2D Shapes: - Students will describe important things about 2D shapes, like how many sides, corners, and if they look the same on both sides (symmetry). - They should find shapes that have specific things, like	Classifying 2D Shapes: - Categorize 2D shapes into broader groups, such as quadrilaterals, triangles, and circles. - Identify the subcategories within these groups, like isosceles triangles or rhombuses. Exploring Perimeter and Area: - Calculate the perimeter of compound 2D shapes by adding the lengths of their sides. - calculate the area of compound shapes Constructing and Drawing 2D Shapes:	Understanding What Fractions Represent: - Recognize that fractions represent parts of a whole or a group. - Understand that fractions are used to show how something is divided into smaller, equal parts. Identifying Basic Fractions: - Recognize and name simple fractions, such as halves (1/2) and quarters (1/4). - Learn to identify these fractions in everyday objects, like dividing a pizza into halves or sharing cookies into quarters.	Introduction to Simplifying Fractions: - Learners will be introduced to the concept of simplifying fractions by reducing them to their lowest terms. Comparing and Ordering Fractions with Different Denominators: - Students will learn how to compare and order fractions when the denominators are different, using visual aids and simple reasoning. Comparing and Ordering Fractions with Common Denominators/Num	Simplifying Fractions: - Simplify fractions with different numerators and denominators to their lowest terms. Comparing and Ordering Fractions (Different Denominators): - Compare and order fractions when the denominators are dissimilar, using visual models and reasoning. Comparing and Ordering Fractions (Common Denominators/Numerators): - Compare and order fractions by finding common denominators or common numerators, promoting understanding of equivalence.



#### lines.

Recognizing	Basic
Shapes:	

-Introduce simple geometric shapes like circles, squares, triangles, and rectangles. Help learners identify these shapes in their surroundings and understand their basic properties, such as the number of sides and corners.

#### Calculating Area in Basic Shapes:

-Begin to introduce the concept of area by focusing on basic shapes like squares and rectangles. Show learners how to count the number of squares inside these shapes to find their area in a visual and concrete way.

Practical Application of Measurement:

exactly 90 degrees
or sides that are
the same length.

corners that are

### Naming 2D Shapes:

- Learners should group 2D shapes into bigger groups, like squares and rectangles in one group, and triangles in another. - They should also know the smaller aroups inside these biaaer groups, like triangles that have two sides the same length. Introducing **Perimeter and** 

- Students will find

Area:

out how to

measure the

outside of 2D

#### - Use rulers, protractors, and other tools to accurately draw 2D shapes with specific dimensions. - Understand how

to construct shapes based on given criteria, like drawing a parallelogram with specific angles.

# Analysing Real-World

## Applications of 2D Shapes:

- Apply knowledge of 2D shapes to solve real-world problems, such as calculating the area of a room or determining the shape of a garden. - Recognize and describe the presence of 2D shapes in everyday objects and architecture. - Understand the concept of "more" or "less" when comparing fractions. - Compare basic

fractions (e.g., 1/2 and 1/4) to identify which represents a larger or smaller part.

### Practical Use of Fractions:

- Apply the concept of fractions in everyday situations, such as sharing toys or snacks with friends. - Use simple fractions to describe how

objects or groups are divided or shared in a practical context.

erators: - Learners

- Learners will explore comparing and ordering fractions by identifying common denominators or numerators, focusing on the idea of equivalence.

#### Adding & Subtracting Fractions with Common

# Denominators:

- Students will begin to add and subtract fractions with common denominators, simplifying answers whenever possible.

Adding and Subtracting Fractions with Different Denominators: - Learners will be introduced to

#### Adding and Subtracting Fractions (Different Denominators):

- Perform addition and subtraction operations on fractions with distinct denominators, ensuring the result is less than one.

# Multiplying Proper Fractions (Simplified Answers):

Multiply proper fractions together, ensuring the answer is simplified to its lowest terms.
Attempt using mixed numbers when conversion to improper (top-heavy) fractions will be required first.

# Dividing one Fraction by another:

- Perform division operations to divide proper fractions, expressing answers as fractions.

#### Solving Word Problems (Dividing Proper Fractions by Whole Numbers):

- Solve word problems that require dividing proper fractions by whole numbers and express



-Encourage practical application by having learners measure everyday objects, identify straight lines, and recognize basic shapes in their environment. Provide simple, hands-on activities that reinforce these concepts in a real-world context. shapes, called the perimeter, by adding up all the sides. - They should also learn how to find how much space is inside shapes like rectangles and squares, either by counting small squares or using special maths rules.

#### Constructing and Drawing 2D Shapes:

Students will use tools like rulers and protractors to make 2D shapes that have the right size.
They will also know how to make shapes when they get special instructions, like drawing a

four-sided shape

# Identifying Types of Angles:

-Students should be able to distinguish and correctly identify different types of angles, including acute, obtuse, right, and straight angles, both in written descriptions and geometric figures.

#### **Measuring Angles:**

-Develop proficiency in using a protractor to accurately measure angles in degrees.

#### Constructing Angles:

-Learn to use a ruler and protractor to draw angles with specified measurements. Students should be able to construct angles of various addition and subtraction of fractions with distinct denominators, ensuring the result remains less than one.

#### Multiplying Proper Fractions with Simplified Answers:

- Students will learn to multiply proper fractions together while simplifying the result to its lowest terms.

### Introduction to Dividing Fractions:

- Learners will be introduced to the concept of dividing proper fractions, expressing answers as fractions.

#### Solving Basic Word Problems with Fractions: - Students will solve

#### answers in context.

# Calculating Decimal Fraction Equivalents:

- Convert fractions to their decimal equivalents with an understanding of place value and decimal notation.

#### **Understanding Percentages:**

-Students should have a solid grasp of the concept of percentages and be able to explain that percentages represent parts out of 100. They should understand that percentages are a way to express proportions and can be used to compare quantities.

# Calculating Percentages of an Amount:

-Develop proficiency in calculating percentages of a given amount. Students should be able to use various methods, such as finding a percentage of a number through multiplication or by converting percentages into fractions and decimals. They should also be able to solve



with certain angles.	sizes and types, including acute,	simple word problems involving	practical problems that involve finding a percentage of an
angles.	obtuse, and right	the division of proper	amount. Introduce the idea of
Analysing	angles, following	fractions by whole	10% as a building block.
Real-World	given instructions or	numbers and express	10% as a building block.
Applications of 2D	angles from a	answers within a	Calculating One Amount as a
	2	contextual	Percentage of Another:
<b>Shapes:</b> - Students will use	diagram.	framework.	-Enable students to calculate one
		Irdinework.	
what they know	Angles in Real Life:	•	amount as a percentage of
about 2D shapes	-Apply knowledge of	Introduction to	another, emphasising the
to solve problems	angle types, angle	Decimal Fraction	concept of finding a percentage
in the real world,	measurement, and	Equivalents:	increase or decrease. They
like finding out	angle construction to	- Learners will be	should be able to use this
how much carpet	solve geometric	introduced to the	knowledge to solve problems
to buy for a room	problems and	idea of converting	related to discounts and other
or how to design a	real-world scenarios.	fractions to their	real-world applications involving
garden.	Students should be	decimal equivalents,	percentages.
- They will also	able to calculate	emphasising	
spot and talk	missing angles in	understanding place	
about 2D shapes in	triangles,	value and decimal	
things we see	quadrilaterals, and	notation.	
everyday, like	other polygons, as		
buildings and	well as use angles to	Exploring the	
objects.	solve problems	Concept of	
	involving direction	Percentages:	
Identifying Types	and orientation.	- Students should	
of Angles:		gain a foundational	
- Learners should		understanding of	
be able to tell the		percentages,	
difference		recognizing that they	
between angles		represent parts out	



less than and		of 100 and can	
greater than 90		express proportions	
degrees.		for comparing	
5		quantities.	
<b>Measuring Angles</b> :			
- Students will be		<b>Calculating Basic</b>	
introduced to a		Percentages of an	
protractor to		Amount:	
measure angles in		- Learners will	
degrees, which		develop proficiency	
tells us how big		in calculating basic	
they are.		percentages of given	
		amounts using	
Introduction to		methods like	
Drawing Angles:		multiplication and	
- Students will		converting	
learn how to use a		percentages into	
ruler and		fractions and	
protractor to make		decimals.	
angles that are a			
certain size. They		Calculating	
can make big		Percentage	
angles, small		Increases and	
angles, or right		Decreases:	
angles, following		- Students will be	
directions or		introduced to	
copying from a		calculating one	
picture.		amount as a	
_		percentage increase	
Applying Angle		or decrease relative	
Concepts:		to another, with a	



things like giving	Summer 2
directions.	Statistics & Probability
	countering Developing Enhancing



Recognizing Numbers and Counting: - Develop the ability to recognize and identify numbers from 1 to 10. - Practise counting objects and understanding numerical order. Matching Objects to Numbers - Connect objects to their corresponding numbers, such as matching three apples with the number "3." - Begin to understand that numbers represent quantities.	Introducing Function Machines: - Students will be introduced to function machines and how they work. - They will learn to find the output of a function machine when given the input. Using Diagrams and Numbers with Function Machines: - Learners will start representing function machines using diagrams	Finding Function Outputs and Inverse Operations: - Find the output of a single function machine when given the input. - Apply inverse operations to determine the input from the output of a function machine. Utilising Diagrams, Letters, and Number Operations with Function Machines: - Represent function machines using diagrams and algebraic	Collecting Data: - Learn to gather information by counting or asking questions in a structured way. - Understand that data is a collection of facts or details about something. Creating Simple Pictograms: - Use basic symbols or pictures to represent collected data. - Create simple pictograms to display	Introduction to Pictograms: - Learners should gain the ability to read and comprehend pictograms, recognizing that each symbol conveys a specific quantity. - Students will be able to make simple comparisons between quantities depicted in pictograms. Creating Basic Pictograms: - Students will be able to construct basic pictograms to	<ul> <li>Interpreting Pictograms:         <ul> <li>Read and interpret</li> <li>information presented in</li> <li>pictograms, understanding that</li> <li>each symbol represents a certain</li> <li>quantity.</li> <li>Make comparisons between</li> <li>different quantities represented</li> <li>in pictograms.</li> </ul> </li> <li>Creating Pictograms:         <ul> <li>Create pictograms to</li> <li>represent data, choosing</li> <li>appropriate symbols and scales.</li> <li>Label pictograms clearly and</li> <li>ensure they effectively convey</li> <li>information.</li> </ul> </li> <li>Analysing Tally Charts:         <ul> <li>Interpret data presented in</li> <li>tally charts, recognizing how</li> </ul> </li> </ul>
Operations	and simple	algebraic expressions.	data related to familiar	represent data,	tally charts, recognizing how tally marks represent individual
- Explore basic addition	algebraic	- Use letters	objects or preferences.	selecting appropriate	units.
and subtraction as	expressions.	(unknowns) in		symbols and scales. - Learners should	- Use tally charts to count and
combining or taking away objects. - Use physical objects or	- They will use numbers and basic operations to	combination with number operations to describe and solve	Interpreting Pictograms:	practise labelling	compare the frequency of different items or categories.
pictures to grasp the concept of adding and	describe and solve problems involving	function machine problems.	- Recognize and understand that each	effectively convey information.	<b>Constructing Tally Charts:</b> -Construct tally charts to collect



Introducing Simple Patterns - Recognize and create simple patterns, like alternating colours or shapes in a sequence. - Begin to understand the idea of repetition and predictability. Exploring Shapes and Sizes - Identify and differentiate between basic shapes, such as circles, squares, and triangles. - Compare and describe the size of objects using terms like "big," "small," "short," and "long."	function machines. Recognizing Function Machines in Expressions: - Students will learn to identify function machines when they are presented in algebraic expressions. - They will begin to understand the connection between expressions and function machines. Substituting Values into Expressions: - Students will learn how to substitute specific values into algebraic expressions.	Identifying Function Machines from Expressions: - Recognize function machines when presented in algebraic expressions. - Understand the relationship between expressions and function machines. Substitution into Expressions: - Learn how to substitute specific values into algebraic expressions. - Calculate the result of expressions when values are replaced with unknowns or numbers. Determining Inputs and Outputs for Two Function Machines:	symbol or picture in a pictogram represents a piece of information or data. - Read and interpret simple pictograms to answer questions about the collected data. <b>Comparing Data Sets with Pictograms:</b> - Use pictograms to compare data from different categories or groups. - Make basic comparisons, such as identifying which category has more or fewer items based on the pictogram.	Exploring Tally Charts: - Learners will explore tally charts and understand how tally marks represent individual units of data. - Students will be able to use tally charts for counting and making basic comparisons between different items or categories. Making Tally Charts: - Students will develop the skill to create tidy and well-organised tally charts for data collection and organisation. - Learners should ensure that their tally charts are neatly presented and easily understandable.	and organise data efficiently. - Ensure tally charts are neatly organised and labelled, making them easy to read and understand. Understanding Bar Charts (Bar Graphs): - Interpret information presented in bar charts, recognizing that the height or length of bars represents data values. - Compare data across different categories or time periods using bar charts. Creating and Customizing Bar Charts: - Create bar charts to display data, selecting appropriate scales and labels for both axes. - Customise bar charts by choosing different colours and styles to enhance visual clarity and impact. Analysing Pie Charts (Circle Graphs): - Interpret data presented in
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Working with Two - Find both input Understanding Bar pie charts, understanding that - Recoanize patterns in everyday objects and Function and output values for Charts (Bar each sector represents a portion activities. Machines: two different Graphs): of the whole. - Analyse the distribution of - Learners will find function machines. - Learners should both input and - Analyse how begin understanding data among categories or output values for multiple function the concept of bar components within a pie chart. two different machines can be charts, where the -Understand that each sector function machines. used in a sequence. height or length of represents a portion of the whole - They will explore bars signifies data and is proportional to the data it how multiple Using Diagrams, values. represents. function machines Letters, and Two - Students will be can be used in a able to initiate **Function Machines**: - Represent and comparisons of data sequence and learn to represent solve problems across different involving two categories or time and solve two-step periods using basic function machine function machines problems using using diagrams and bar charts. diagrams and algebraic simple algebraic expressions. **Creating Simple Bar** expressions. - Apply letters Charts: (unknowns) and - Students will be able to generate number operations to describe and solve their own simple bar two-step function charts to display machine problems. data, making informed choices regarding scales and axis labels. **Exploring Pie** 



		Charts: - Learners will explore the world of pie charts, comprehending that each sector represents a portion of a whole. - Students will be able to analyse how data is distributed among categories or components within a pie chart.	



		c	ycle Two		
	Autumn 1		Autumn 2		
Number 1				Geometry &	Measure
Encountering Developing Enhancing E		Encountering	Developing	Enhancing	
Understanding Addition: - Build on the concept of addition by applying it to more complex scenarios. - Develop the ability to recognize and apply addition as a fundamental operation for combining quantities in various contexts, including numbers and word problems.	Place Value: - Students will be able to understand the place value of 4 digit numbers They will understand the importance of each digit's place in larger numbers, including hundreds and thousands. Adding and Subtracting in Columns: - Learners will start	Column Addition and Subtraction: - Add and subtract four digit numbers using column addition and subtraction -Move onto problems that involve borrowing and carrying when appropriate.	.Recognizing Clocks - Identify and recognize the appearance of both analogue and digital clocks. - Distinguish between the hour and minute hands on an analogue clock. Understanding Day and Night - Differentiate	Introducing Analogue Clocks: - Students will be able to identify analogue clocks and their basic parts, such as the hour hand, minute hand, and clock face. - They will start learning to tell the time on analogue clocks, particularly to the nearest hour and half-hour.	Calculating Duration of Events - Learn to measure the duration of simple events using minutes and hours. - Calculate the time elapsed between the start and end of events using analogue clocks. Converting Analogue to Digital Time -Pupils will practise using the 24 hour clock. Interpreting Calendars - Explore the use of calendars to
Understanding Subtraction: - Extend the understanding of subtraction to more diverse situations where it	adding and subtracting two-digit numbers (from 10 to 99) using column methods.	Ordering Numbers (Up to 10,000): - Extend the ability to arrange numbers in ascending and	between daytime and nighttime. - Recognize that the sun is typically up during the day and down during	Measuring Event Duration: - Learners will measure how long events last, using	track dates, months, and years. - Understand how to locate specific dates and events on a calendar. Worded Time Problems



is necessary to subtract or remove items from a given set. - Identify and solve subtraction problems involving larger numbers and real-world scenarios,	- They will be introduced to the vertical column method for addition and subtraction, focusing on tens and ones without	descending order to include larger numbers up to 10,000. - Demonstrate proficiency in comparing and accurately placing	the night. Sequencing Daily Activities - Arrange daily activities in chronological order, emphasising	minutes and hours. - <b>Units of Time:</b> - Pupils will recap the units of time and their relation to each other.	<ul> <li>Solve word problems that involve telling time and calculating time intervals.</li> <li>Use reading and comprehension skills to extract relevant information from the problems.</li> <li>Introduce the idea of time zones throughout the world.</li> </ul>
such as calculating change or comparing quantities.	carrying or borrowing.	numbers on an expanded number line, including values	morning, afternoon, and evening routines.	Analogue to Digital Time:	Adding Time of Events and Calculating Duration
Exploring Multiplication Concepts:	Exploring Number Order (Up to	beyond 100.	- Begin to comprehend the	- Students will start translating the time	- Add the durations of multiple events using analogue clocks and
- Deepen the	<b>1000):</b> - Students will	Multiplication Timetables:	concept of a daily schedule.	they see on analogue clocks	units of time. - Calculate the total time elapsed
understanding of	begin to arrange	- Recall and apply	schedule.	into digital format,	when multiple events occur
multiplication by exploring	numbers in order,	multiplication facts	Basic	like turning 2:30 on	sequentially.
it as a method for scaling	both from smallest	confidently for times	Time-Related	an analogue clock	sequentiany.
5	to largest and	tables up to the 12 x	Vocabulary	into 2:30 PM.	
up or repeated addition,	largest to smallest,	table.	- Learn and use	- They will practise	
e.g., 3 groups of 4 is	for numbers up to	- Solve multiplication	simple time-related	going back and	
equivalent to 4 + 4 + 4.	1,000.	problems involving t	vocabulary, such as	forth between	
- Apply multiplication to	- They will practise	demonstrating	"morning,"	analogue and	
solve more complex	comparing and	improved	"afternoon," "night,"	digital ways of	
problems involving larger	correctly placing	multiplication	"today," and	showing time.	
numbers, arrays, and	numbers on a	fluency.	"tomorrow."		
real-world situations.	number line,		- Practice using	Calendars:	
	including numbers	Long Multiplication:	these words in	- Learners will learn	
Introduction to Division	beyond 100.	- Advance long	everyday	how to use	
		multiplication skills	conversations	calendars to keep	
Concepts:	Multiplication	to include two-digit	related to time.	track of dates,	



- Expand the comprehension of division by delving into the concepts of sharing and grouping objects into equal parts for more extensive sets.

- Solve division problems involving larger dividends, divisors, and quotients, and explore remainders and fractions.

### Recognizing Mathematical Symbols:

Continue to learn and recognize mathematical symbols such as addition (+), subtraction (-), multiplication (×), and division (÷).
Gain a deeper understanding of how these symbols represent mathematical operations and apply them to more

Facts: - Students will start recalling and using multiplication facts for times tables up to the 10 x table. - They will solve multiplication problems involving two-digit numbers multiplied by single-digit numbers, improving their multiplication skills.

### Introduction to Long Multiplication:

- Learners will be introduced to long multiplication, starting with two-digit by two-digit multiplication using the grid method. - They will learn by two-digit multiplication using the grid method. - Apply the grid method for multiplication efficiently to solve more complex problems involving larger numbers.

#### Division Using Written Methods:

Build on knowledge of division methods by learning and practising the short division method.
Develop proficiency in solving division problems involving larger dividends and divisors, including remainders, using written methods such as short division.

months, and years. - They will start understanding how to find specific dates and events on a calendar. Solving Time Word **Problems:** - Students will solve word problems that involve telling time and fiaurina out how long things take. - They will use their reading and understanding skills to find the information they need in the problems. Adding Time of **Events and** 

Events and Figuring Out Duration: - Students will learn how to add up how long multiple events last using analogue



intricate mathematical expressions. Applying Basic Maths Facts: - Build upon the recall of basic addition and subtraction facts for numbers 0-5 to include facts for numbers up to 10 or higher. - Apply these facts confidently and efficiently to solve a wide range of mathematical problems, laying the foundation for more advanced mathematical operations.	how to use the grid method efficiently to solve more complicated problems with larger numbers. <b>Exploring Division</b> with Written Methods: - Students will explore division methods and begin to learn and practise the short division method.			clocks and units of time.		
	Spring 1			Spring 2		
	Number 2		Algebra			
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing	
	Multiples and	Identifying Multiples and		Introducing	Understanding Unknowns:	



Collecting Data from	Factors:	Factors:	Recognizing	One-Step	- Define and identify what an
Simple Observations:	- Pupils will find	- Identify multiples	Symbols as	Equations:	unknown is in mathematical
- Develop the ability to	pairs of numbers	and factors of a	unknowns:	- Learners will learn	expressions.
collect basic data by	that are factors of	given number.		how to solve	- Recognize and use simple
counting and observing	a given number	- Find all factor	- Practise	one-step equations	unknowns (e.g., x, y) to represent
everyday objects or	and begin to	pairs of a number,	identifying vari as	with addition or	unknown quantities.
	understand what	demonstrating a		subtraction. They	
occurrences.	factors and	clear understanding	placeholders for	should practise	Solving One-Step Equations
- Take part in recording	multiples are.	of factors and	numbers in simple	using opposite	- Learn to solve one-step
the data in a simple,	Multiplication and Division:	multiples.	equations.	actions to find out what the unknown	equations involving addition or subtraction.
organised manner, such as	- Learners will	Problem Solving		is, like in equations	- Practise using inverse operations
tally marks or simple	solve problems	with Multiplication	Solving Simple	such as $3 + 1 = 7$ .	to isolate the unknown in equations
drawings.	with multiplication	and Division:	Equations with		like $3 + x = 7$ .
	and division.	- Solve problems	Concrete	Solving Simple	
Creating Basic	- They will use	that involve	Examples:	Equations:	Solving Simple Equations with
Pictograms:	what they know	multiplication and	- Explore basic	- Learners will take	Multiplication and Division
- Learn to represent	about factors and	division.	equations with a	their	- Extend equation-solving skills to
collected data using simple	multiples to solve	- Apply knowledge	single unknown,	equation-solving	include multiplication and division.
pictograms, where each	different kinds of	of factors and	using everyday	skills a step further	- Solve equations like 2x = 10 or 15
picture or symbol	maths problems, including some	multiples, as well as squares and cubes,	objects like apples	by using multiplication and	÷ y = 3 by applying inverse
represents one unit of data.	with squares and	to solve various	or toys to represent	division. They	operations.
- Explore using easily	cubes.	mathematical	numbers.	should solve	Using Expressions to Represent
recognizable symbols, like		problems.	- Begin to solve	equations like 2x =	Real-World Scenarios
smiley faces or stars, to	Practical Money		these equations by	10 or 15 ÷ y = 3 by	- Translate real-world situations
create the pictograms.	Skills:	Vocabulary of	finding the value of	doing opposite	into simple algebraic expressions.
	- Students will	Prime Numbers and	the unknown	actions.	- Understand how to represent
Interpreting Pictograms	practise making	Composite	through physical		situations like "5 more than a
for Number Patterns:	specific amounts of money using a	Numbers: - Define and use		Using Expressions to Represent	number" as algebraic expressions (x
	of money using a	- Denne and use			+ 5).



<ul> <li>Understand that pictograms represent data visually and that patterns can emerge from the arrangement of symbols.</li> <li>Begin to identify and discuss simple number patterns, such as which symbol appears most frequently or least frequently in the pictogram.</li> <li>Extending Pictogram Understanding: <ul> <li>Progress to more complex pictograms, involving larger sets of data and a variety of symbols.</li> </ul> </li> </ul>	combination of coins and notes. - They will learn to form amounts correctly and use them for everyday purchases, especially when shopping at a local store. <b>Connecting</b> <b>Money and</b> <b>Decimals:</b> - Learners will begin to see how money and decimals are related. They will understand that cents are parts of a whole dollar. - They will start using decimal numbers when dealing with money, such as understanding that £1.50 is the same	the vocabulary related to prime numbers, prime factors, and composite numbers. - Distinguish between prime and composite numbers, understanding their properties. <b>Reinforcing</b> <b>Vocabulary and</b> <b>Prime Number</b> <b>Recognition:</b> - Continue to use and understand the vocabulary of prime numbers, prime factors, and composite numbers. - Determine whether a number up to 100 is prime or composite and recall prime numbers up to 19.	manipulation, such as counting objects. Using Shapes and Pictures for Algebraic Ideas: - Understand that algebraic concepts can be connected to shapes and pictures. - Practise using drawings or shapes to illustrate basic equations, making the idea of unknowns more tangible. Discovering Balance in Equations: - Explore the idea of balance by understanding that	Real-World Scenarios: - Learners should be able to turn real-world situations into simple maths sentences. They should understand how to write things like "5 more than a number" as maths sentences, like x + 5. Evaluating Expressions: - Learners will learn to put numbers into unknowns and figure out the maths sentences. They should calculate things like 2x - 3 when they know what "x" is. Identifying Patterns and Relationships:	<ul> <li>Substituting intoExpressions         <ul> <li>Learn to substitute values for unknowns and evaluate algebraic expressions.</li> <li>calculate the value of expressions like 2x - 3 when x is given.</li> </ul> </li> <li>Identifying Patterns and Relationships         <ul> <li>Recognize patterns and relationships between numbers and unknowns.</li> <li>Explore how changing the value of a unknown affects the outcome in algebraic expressions and equations</li> </ul> </li> <li>Identify Number Patterns:         <ul> <li>Recognize and describe linear number patterns in sequences, highlighting the constant difference between consecutive terms.</li> </ul> </li> <li>Extend Sequences:         <ul> <li>Confidently use the terminology of position and term when describing linear sequences.</li> </ul> </li> </ul>
	understanding that				, , , , , , , , , , , , , , , , , , , ,



Learning to Calculate Totals with Money: - Students will learn how to add up the cost of items when they have a list with prices and quantities, just like when shopping in real life. - They will use addition skills to find the total cost and practice making a shopping list for a visit to the store. Change: - Students will figure out how much change they should get back after buying something by taking away the	Methods: - Multiply numbers with up to 4 digits by a one or two-digit number. - Utilise formal written methods, including long multiplication, particularly when multiplying by two-digit numbers. Advanced Multiplication with Formal Methods: - Further practice multiplying numbers up to 4 digits by one or two-digit numbers. - Extend proficiency in using formal written methods, particularly focusing on long multiplication for two-digit numbers.	a balance between two sides. - Engage with simple equations like "2 + 3 = 5" and "4 - 2 = 2" to grasp the concept of keeping both sides equal.	connections between numbers and unknowns. They should see how changing the value of an unknown affects the maths sentences and equations. Identify Number Patterns: - Learners will recognize and talk about number patterns where each number is a certain amount bigger or smaller than the one before it. Describing Sequences: - Learners should feel comfortable talking about where a number is in a	applying the identified pattern to predict and generate subsequent terms accurately. Generalize and Express Pattern: -Develop the ability to generalise linear number patterns and express rules in words based on multiplying followed by either addition or subtractions. (term to term rule) Solve Problems Involving Sequences: -Apply understanding of linear number sequences to solve real-world problems and mathematical puzzles, requiring the recognition and manipulation of such sequences to find missing terms or make predictions.	
taking away the cost from the amount they paid. - They will also	Mental Multiplication and Division:		a number is in a sequence and what it's called. They should be able to		



			4	
practise counting	- Develop mental	add new numbers		
out the right coins	maths skills to	to a sequence by		
and notes to give	multiply and divide	following the		
as change when	numbers.	pattern they've		
making purchases.	- Draw upon known	found.		
51	facts and			
Exploring	multiplication tables	Using		
Budgeting and	to perform mental	Mathematical		
Decision-Making:	calculations	language to		
- Students will	efficiently.	describe		
start learning how	,	sequences:		
to make good	<b>Recognizing Coins</b>	- Learners should		
choices when	and Notes:	be able to make		
shopping by	- Identify and	general rules for		
comparing prices	distinguish various	number patterns		
and thinking about	coins and notes,	and say them in		
what they like.	including their	words, like "multiply		
- They will begin to	denominations and	and then add"		
set a budget for	unique features.	(term to term rule).		
shopping trips and	- Recognize the			
make choices that	monetary value	Looking at		
stay within that	associated with each	Real-Life		
budget.	coin and note.	Sequences:		
	- Apply this	- Learners will use		
Applying Money	knowledge during a	what they know		
Skills in Real Life:	visit to a local	about number		
- Learners will use	supermarket,	patterns to solve		
the money skills	identifying the	real-life problems		
they learned when	currency used in	and maths puzzles.		
shopping for	transactions.	They should be able		
groceries, personal		to find missing		



items, or during everyday transactions.	Making Amounts with Coins and Notes: - Construct specific monetary amounts using a combination of coins and notes, considering different denominations. - Demonstrate the ability to form amounts accurately and efficiently. - Practise making purchases and paying for items at the local supermarket using the appropriate autors and	numbers or make predictions using these patterns.	
	Money as a re-cap on Decimals: - Understand the connection between money and decimals by recognizing that cents represent parts of a whole dollar. - Begin to use decimal notation		



when dealing with monetary amounts, such as understanding that £1.50 an be represented as 1.50 pounds.       Image: Constant of the second of th		
pounds.         Calculating Totals with Money (Including Real-Life Scenarios): <ul> <li>Calculate the total cost of items when given a list of prices and quantities, simulating real-life shopping scenarios.</li> <li>Apply addition skills to find the sum of multiple items, considering both the value of coins and notes.</li> <li>Use these skills to create and manage a shopping list during the supermarket visit.</li> </ul>	monetary amounts, such as understanding that	
pounds.         Calculating Totals with Money (Including Real-Life Scenarios): <ul> <li>Calculate the total cost of items when given a list of prices and quantities, simulating real-life shopping scenarios.</li> <li>Apply addition skills to find the sum of multiple items, considering both the value of coins and notes.</li> <li>Use these skills to create and manage a shopping list during the supermarket visit.</li> </ul>	represented as 1.50	
Calculating Totals with Money (Including Real-Life Scenarios): - Calculate the total cost of items when given a list of prices and quantities, simulating real-life shopping scenarios. - Apply addition skills to find the sum of multiple items, considering both the value of coins and notes. - Use these skills to create and manage a shopping list during the supermarket visit.		
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(Including Real-Life Scenarios):       - Calculate the total cost of items when given a list of prices and quantities, simulating real-life shopping scenarios.         - Apply addition skills to find the sum of multiple items, considering both the value of coins and notes.         - Use these skills to create and manage a shopping list during the supermarket visit.		
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considering both the value of coins and notes. - Use these skills to create and manage a shopping list during the supermarket visit.	skills to find the sum	
considering both the value of coins and notes. - Use these skills to create and manage a shopping list during the supermarket visit.	of multiple items,	
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- Use these skills to create and manage a shopping list during the supermarket visit.		
create and manage a shopping list during the supermarket visit.		
a shopping list during the supermarket visit.		
during the supermarket visit.		
supermarket visit.		
Calculating Change:		



- Determine the
change to be
received after
making a purchase
by subtracting the
total cost from the
amount paid.
- Accurately count
and provide change
using a combination
of coins and notes.
- Practice giving
and receiving
change during the
supermarket visit
when making
purchases.
Budgeting and
Decision-Making:
- Learn to make
informed decisions
when shopping by
comparing prices,
evaluating quality,
and considering
personal preferences.
- Set a budget for a
shopping trip and
make choices that fit
within the budget





Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Basic Rules for Arithmetic Operations: - Learn and apply basic rules for addition, subtraction, multiplication, and division with small numbers. - Practise these operations with simple calculations involving numbers to 10 Making Sensible Guesses with Rounding: - Learners will hopefully be able to grasp the idea of rounding numbers as a way to make sensible guesses. -They should understand that rounding makes numbers easier to work with and helps in making quick and reasonable estimations in simple everyday situations, like guessing the number of candies in a jar or the cost of a small toy.	Introducing BIDMAS (Order of Operations): - Students will be introduced to the BIDMAS acronym, which stands for Brackets, Indices, Division and Multiplication, Addition and Subtraction. - They will learn how to use the order of operations to begging to solve problems. Rounding Numbers for Simple Estimations: - Pupils will practise rounding to the nearest ten for smaller numbers and use rounded numbers to make quick and	Understanding BIDMAS (Order of Operations): - Familiarise with the BIDMAS acronym (Brackets, Indices, Division and Multiplication, Addition and Subtraction). - Apply the order of operations to solve complex mathematical expressions. Rounding Numbers for Simple Estimations: Students will gain confidence in using rounding as a helpful tool for making quick and approximate calculations. Calculating Decimal Fraction	Sharing Equally: -Support learners to be able to understand and demonstrate the concept of sharing objects or items equally among a group. Aim to divide a collection of objects into equal parts and ensure that each part has the same number of items. Recognizing Proportion: -Help students recognize the idea of proportion by using concrete objects and visual aids. They will	Understanding Ratios: - Students will understand what a ratio means, which is like comparing how much of one thing there is compared to another thing. For example, if there are 2 red marbles and 3 blue marbles, the ratio is 2 to 3 or 2:3. - Learners should be able to write ratios in the form of "2 to 3" or "2:3" and know why they are helpful in real life. Simplifying Ratios:	<ul> <li>Understanding Ratios: <ul> <li>Define what a ratio is and recognize that it represents a comparison of two or more quantities.</li> <li>Express ratios in the form of "a to b" or "a:b" and understand their significance in real-world contexts.</li> </ul> </li> <li>Simplifying Ratios: <ul> <li>Learn how to simplify ratios to their simplest form by dividing both parts by their greatest common factor.</li> <li>Apply this simplification process to ratios to make them easier to work with and understand.</li> </ul> </li> <li>Using Ratios to Compare Quantities: <ul> <li>Apply ratios to compare different quantities or parts within a whole, such as comparing the number of boys to girls in a class.</li> </ul> </li> </ul>



-Students should feel confident using rounding to make sensible and approximate guesses.	simple estimates in everyday situations, like guessing how many things are in a group or quickly figuring out the total cost of items while shopping.	Equivalents: - Convert fractions to their decimal equivalents with an understanding of place value and decimal notation.	hopefully be able to compare the sizes of different groups of objects and identify when one group has more or less than the other.	- Learners should learn how to make ratios simpler by finding the biggest number that fits both parts. This helps when we have big numbers in a	<ul> <li>Solve problems that involve finding one quantity when the ratio and another quantity are given.</li> <li>Building on the Unitary Method: <ul> <li>Define the unitary method as a problem-solving approach that involves finding the value of one</li> </ul> </li> </ul>
	Discovering Decimal Fraction Equivalents: - Students will learn how to turn fractions into decimal numbers, using their knowledge of place value and the decimal system. Understanding Percentages: - Students will start to get the hang of what percentages are. They will explain that percentages	Calculating Percentages of an Amount: -Develop proficiency in calculating percentages of a given amount. Students should be able to use various methods, such as finding a percentage of a number through multiplication or by converting percentages into fractions and decimals. They should also be able to solve practical problems that involve finding a percentage of an	Mixing Simple Recipes: -Introduce the concept of mixing and proportion through simple recipes, such as making fruit squash, fruit salad or a sandwich. - Learners will be given the opportunity to follow basic instructions to combine different ingredients in the right proportions to	ratio. - Students will be able to practise making ratios easier to use and understand. Using Ratios to Compare Quantities: - Students will use ratios to compare how many of one thing there are compared to another thing. For example, they can figure out if there are more boys or	unit and then extending it to find the total. - Understand that the unitary method is a practical application of proportions. <b>Expanding Proportion:</b> - Explain that proportion relates one part to the whole and ratio compares one part to another part or parts. - Recognize that proportions are used to compare quantities in a way that maintains a consistent relationship. <b>Solving Proportions Problems:</b> - Learn methods to solve proportions, such as



	show parts out of 100, and they will understand that percentages are a way to talk about how things compare to each other. Starting to Calculate Percentages of an Amount: - Learners will learn how to figure out percentages of a given amount. They will use different methods, like multiplying to find a percentage of a number or changing percentages into fractions and decimals. Beginning to Calculate One Amount as a Percentage of	amount. Re-cap the idea of 10% as a building block. Calculating One Amount as a Percentage of Another: -Enable students to calculate one amount as a percentage of another, emphasising the concept of finding a percentage increase or decrease. They should be able to use this knowledge to solve problems related to discounts, markups, tax calculations, and other real-world applications involving percentages. Calculating Totals with Money (Including Real-Life Scenarios):	create a simple dish or drink. Using Visual Models: -Teach students to use visual models, such as drawings or pictures, to represent the sharing or mixing of objects or ingredients. They should be able to draw or identify simple visual representations that illustrate equal sharing and proportion. Practical Application: -Encourage practical application by having students	girls in a class using ratios. - Learners should be able to solve problems where they know one part of the ratio and need to find the other part. It's like finding missing puzzle pieces. Introduction to the Unitary Method: - Learners should understand that the unitary method is a way to solve problems. It starts with just one piece, like one chocolate chip, and then helps find out how many chocolate chips are in the whole cookie. - Students will learn that the unitary	cross-multiplication or equivalent fractions. - Apply these techniques to solve problems involving proportions in various contexts, such as recipe scaling or map reading. <b>Real-World Applications of Ratio and Proportion:</b> - Apply the concepts of ratio and proportion to solve real-world problems related to scaling, pricing, and mixing ingredients. - Understand how ratio and proportion are used in everyday life, from adjusting recipe quantities to determining distances on maps.
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learn how to find one amount as a percentage of another. They will focus on understanding what it means to find a percentage increase or decrease. They will use this knowledge to solve problems about discounts, price increases, taxes, and other real-world situations that use percentages. Exploring Calculating Totals with Money (Including Real-Life Scenarios): - Learners will find out how to	<ul> <li>Calculate the total cost of items when given a list of prices and quantities, simulating real-life shopping scenarios.</li> <li>Apply addition skills to find the sum of multiple items, considering both the value of coins and notes.</li> <li>Use these skills to create and manage a shopping list during the supermarket visit.</li> <li>Calculating Change: <ul> <li>Determine the change to be received after making a purchase by subtracting the total cost from the amount paid.</li> <li>Accurately count and provide change using a combination of coins and notes.</li> <li>Practice giving</li> </ul> </li> </ul>	engage in hands-on activities that involve sharing, proportion, and mixing. For example, they should be able to share a set of toys equally with their peers, compare the sizes of their portions, and help prepare a simple recipe with guidance.	method is a bit like using proportions in real life to make things fair. Introducing Proportion: - Learners should know that proportions relate one part to the whole thing. For example, if they have 2 out of 5 apples, that's a proportion. - Students will recognize that proportions are used to keep things fair when comparing quantities, like making sure everyone gets their fair share.	
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prices and quantities, just like when they go shopping in real life. - They will add up the prices using coins and notes and practise this skill by making a shopping list for a store visit. Calculating Change: - Students will calculate how much chanae thev should get after buying something by taking away the cost from the amount they paid. - They will also be

able to count out

notes to give as

this skill when

shopping.

the right coins and

change, practising

they have a list of

and receiving change during the supermarket visit when making purchases.

**Budgeting and Decision-Making:** - Learn to make informed decisions when shopping by comparing prices, evaluating quality, and considering personal preferences. - Set a budget for a shopping trip and make choices that fit within the budget constraints. - Reflect on budgeting and decision-making experiences during and after the supermarket visit.

d at fit et ng t.

- Apply money

Application of

**Money Skills:** 

Practical

Solvina **Proportions:** - Students will learn ways to solve proportions, like using tricks such as cross-multiplication or making fractions equal. These tricks help find missing pieces in problems. - Learners should be able to use these techniques to solve problems, like making more cookies from a recipe or finding distances on a map. **Real-World** 

Applications of Ratio and Proportion: - Learners should use ratios and proportions to solve



Discovering Budgeting and Decision-Making: - Students will learn how to make good choices when shopping by comparing prices, thinking about quality, and considering what they like. - They will also start setting a budget for shopping trips and making choices that stay within that budget.	skills acquired during the supermarket visit to real-life situations, such as shopping for groceries, personal items, or making everyday transactions. - Gain hands-on experience managing money, making purchases, and handling change in a practical setting.	real-life problems, like making a bigger batch of cookies or figuring out how much something should cost. - Students will understand that ratios and proportions are like maths helpers in everyday life, from cooking to figuring out how far places are on a map. It's maths they use all the time.	
Applying Money Skills Practically: - Students will use the money skills they learned when shopping for real things, like groceries or personal items, and when doing		the time.	



everyday money transactions. - They will get hands-on experience using money, making purchases, and giving and getting change in real-life situations.				
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	Cycle Three						
Autumn 1			Autumn 2				
Number 1				Geometry & Measure			
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing		
Understanding Addition: - Build on the concept of addition by applying it to more complex scenarios. - Develop the ability to recognize and apply	Place Value: - Students will start learning about place value in numbers up to 1,000.	Understanding Place Value: - Extend understanding of place value to numbers up to 1,000.000	Using a Ruler to Measure Lines: -Introduce learners to the concept of measurement using a ruler. Help them	Properties of 2D Shapes: - Students will describe the properties of 2D shapes, such as number of sides, corners, and if they look the same on	<b>Classifying 2D Shapes:</b> - Categorize 2D shapes into broader groups, such as quadrilaterals, triangles, and circles.		



quantities in various contexts,- Learners will add and subtract two-digit numbers (between 10 anddigit's position in larger numbers, including thousands and hundreds.alongside an object or line and count the units to find its length. Focus onshapes that have specific things, like corners that are exactly 90 degrees or sides thatisosceles trian rhombuses.OuterstandingConstructing	
contexts,and subtractlarger numbers,or line and countspecific things, likerhombuses.Understandingtwo-digit numbersincluding thousandsor line and countspecific things, likecorners that are exactly0between 10 andand hundreds.length. Focus on90 degrees or sides thatConstructing	and Drawing 2D
Understandingtwo-algit numbers (between 10 and (between 10 and and hundreds.including thousands length. Focus onthe units to find its 90 degrees or sides thatConstructingOut two-digit numbers (between 10 and (between 10 andand hundreds.length. Focus on90 degrees or sides thatConstructing	and Drawing 2D
Constructing	and Drawing 2D
The solution of the solution o	
	, protractors, and
	accurately draw
subtraction to more - Pupils will use - Apply the vertical practical manner. <b>and Area:</b> 2D shapes with dimensions.	In specific
I diverse situations where it is the second s	nd how to construct
Lis necessary to subtract or line in the second s	d on given criteria,
	a parallelogram
set. to use the column least 4 digits recognize and the sides. with specific a	
- Identify and solve method for efficiently. distinguish straight - They should also learn	<b>J</b>
subtraction problems addition and -Pupils will be able to lines from other how to find how much Analysing Red	al-World
	of 2D Shapes:
and real-world scenarios including involve borrowing Use everyday like rectangles and - Apply know	wledge of 2D
such as calculating change   borrowing.   and carrying when   examples, such as   squares, either by   shapes to solv	
appropriate. The edges of a book counting small squares problems, such	ch as calculating
- Students will <b>Ordering Numbers</b> door, to help them rules. determining the	ne snape of a
Recognizinglearn to order- Extend the abilityidentify andgarden.Mathematical Symbols:numbers to atto arrange numbersunderstand theConstructing and- Recognize	and describe the
ling and standing and shared shared and an and shared and the standard shared	
descending order to straight lines	
recognize mathematical Multiplication include larger like rulers and architecture.	
symbols such as addition Timetables: numbers up to Recognizing Basic protractors to make 2D	
(+), subtraction (-), - Pupils will recall 1,000,000 Shapes: shapes that have the	
	Types of Angles:



multiplication (×), and	up to the 12 x	- Demonstrate	geometric shapes	- They will also know how	-Students should be able to
division (÷).	table.	proficiency in	like circles, squares,	to make shapes when	distinguish and correctly
- Gain a deeper	- They will use	comparing and	triangles, and	they get special	identify different types of
understanding of how	these facts to solve	accurately placing	rectangles. Help	instructions, like drawing	angles, including acute, obtuse
these symbols represent	multiplication	numbers on an	learners identify	a four-sided shape with	right, and straight angles, both
	problems with	expanded number	these shapes in	certain angles.	in written descriptions and
mathematical operations	two-digit numbers	line, including values	their surroundings		geometric figures.
and apply them to more	multiplied by	beyond 1,000,000	and understand	Analysing Real-World	
intricate mathematical	single-digit		their basic	Applications of 2D	Measuring Angles:
expressions.	numbers, getting	Long Multiplication:	properties, such as	Shapes:	<ul> <li>Develop proficiency in using c</li> </ul>
•	better at	- Advance long	the number of sides	- Students will use what	protractor to accurately
Applying Basic Maths	multiplication as	multiplication skills	and corners.	they know about 2D	measure angles in degrees.
	they go.	to include two-digit		shapes to solve problems	
Facts:	Long	by two-digit	Calculating Area in	in the real world, like	Constructing Angles:
- Build upon the recall of	Multiplication:	multiplication using	Basic Shapes:	finding out how much	-Learn to use a ruler and
basic addition and	- Students will	the grid method.	-Begin to introduce	carpet to buy for a room	protractor to draw angles with
subtraction facts for	begin multiplying	- Apply the grid	the concept of area	or how to design a	specified measurements.
numbers 0-5 to include	two-digit numbers	method for	by focusing on	garden.	Students should be able to
facts for numbers up to 10	by other two-digit	multiplication	basic shapes like	- They will also spot and	construct angles of various
•	numbers using the	efficiently to solve	squares and	talk about 2D shapes in	sizes and types, including
or higher.	grid method.	more complex	rectangles. Show	things we see everyday,	acute, obtuse, and right angles
<ul> <li>Apply these facts</li> </ul>	- They will use this	problems involving	learners how to	like buildings and	following given instructions or
confidently and efficiently	grid method to	larger numbers.	count the number	objects.	angles from a diagram.
to solve a wide range of	solve more		of squares inside		
mathematical problems,	complex problems	Division Using	these shapes to find	Identifying Types of	Angles in Real Life:
laying the foundation for	with bigger	Written Methods:	their area in a	Angles:	-Apply knowledge of angle
more advanced	numbers.	- Build on knowledge	visual and concrete	- Learners should be able	types, angle measurement, and
		of division methods	way.	to tell the difference	angle construction to solve
mathematical operations.	Division Using	by learning and		between angles less than	geometric problems and
	Written Methods:	practising the short	Practical	and greater than 90	real-world scenarios. Students
		division method.	Application of	degrees.	should be able to calculate



- Learners will build on prior learning about division by practising a shorter division method. - They will get better at solving division problems that involve bigger numbers for both the number being divided and the number doing the dividing, and they will also learn how to handle remainders using written methods like short division.	- Develop proficiency in solving division problems involving larger dividends and divisors, including remainders, using written methods such as short division.	Measurement: -Encourage practical application by having learners measure everyday objects, identify straight lines, and recognize basic shapes in their environment. Provide simple, hands-on activities that reinforce these concepts in a real-world context.	Measuring Angles: - Students will be introduced to a protractor to measure angles in degrees, which tells us how big they are. Introduction to Drawing Angles: - Students will learn how to use a ruler and protractor to make angles that are a certain size. They can make big angles, small angles, or right angles, following directions or copying from a picture. Applying Angle Concepts: - Students will use what they know about angles to solve maths problems and problems in the real world. They will figure out missing angles in shapes, and use angles to help with things like giving directions.	missing angles in triangles, quadrilaterals, and other polygons, as well as use angles to solve problems involving direction and orientation.



	Spring 1			Spring 2		
	Number 2			Algebra		
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing	
Collecting Data from Simple Observations: - Develop the ability to collect basic data by counting and observing everyday objects or occurrences. - Practice recording the data in a simple, organised manner, such as tally marks or simple drawings.	Identifying Multiples and Factors: -Pupils will learn to find pairs of numbers that are factors of a given number and understand what factors and multiples are. Exploring Problem Solving with	Identifying Multiples and Factors: - Pupils will be able to find common factors of numbers. Problem Solving with Multiplication and Division: - Solve problems that involve multiplication and division. - Apply knowledge of factors and	Solving Simple Equations with Concrete Examples: - Explore basic equations with a single unknown, using everyday objects like apples or toys to represent numbers.	Introducing One-Step Equations: - Learners will learn how to solve one-step equations with addition or subtraction. They should practise using opposite actions to find out what the unknown is, like in equations such as 3 + = 7. Solving Simple Equations:	Understanding Unknowns: - Define and identify what an unknown is in mathematical expressions. - Recognize and use simple unknowns (e.g., x, y) to represent unknown quantities. Solving One-Step Equations - Learn to solve one-step equations involving addition or subtraction. - Practise using inverse operations to isolate the	



Creating Basic Pictograms: - Learn to represent collected data using simple pictograms, where each picture or symbol represents one unit of data. - Explore using easily	Multiplication and Division: - Learners will start solving problems that involve multiplication and division. - They will use their knowledge of factors, multiples,	multiples, as well as squares and cubes, to solve various mathematical problems. Vocabulary of Prime Numbers and Composite Numbers:	- Begin to solve these equations by finding the value of the unknown through physical manipulation, such as counting objects. Using Shapes and	<ul> <li>Learners will take their equation-solving skills a step further by using multiplication and division. They should solve equations like 2x = 10 or 15 ÷ y = 3 by doing opposite actions.</li> <li>Using Expressions to</li> </ul>	unknown in equations like 3 + x = 7. Solving Simple Equations with Multiplication and Division - Extend equation-solving skills to include multiplication and division. - Solve equations like 2x = 10 or 15 ÷ y = 3 by applying inverse
recognizable symbols, like smiley faces or stars, to create the pictograms.	squares, and cubes to solve different kinds of maths problems.	- Define and use the vocabulary related to prime numbers, prime factors, and composite numbers.	Pictures for Algebraic Ideas: - Understand that algebraic concepts can be connected	Represent Real-World Scenarios: - Learners should be able to turn real-world situations into simple maths sentences. They	operations. Using Expressions to Represent Real-World Scenarios - Translate real-world
for Number Patterns: - Understand that pictograms represent data visually and that patterns can emerge from the arrangement of symbols.	Vocabulary of Prime Numbers and Composite Numbers: - Students will be introduced to new words related to	- Distinguish between prime and composite numbers, understanding their properties.	to shapes and pictures. - Practise using drawings or shapes to illustrate basic equations, making	should understand how to write things like "5 more than a number" as maths sentences, like x + 5. <b>Evaluating Expressions:</b>	situations into simple algebraic expressions. - Understand how to represent situations like "5 more than a number" as algebraic expressions (x + 5).
- Begin to identify and discuss simple number patterns, such as which symbol appears most frequently or least frequently in the pictogram.	prime numbers, prime factors, and composite numbers. - They will begin to tell the difference between prime numbers and	Reinforcing Vocabulary and Prime Number Recognition: - Continue to use and understand the vocabulary of prime numbers, prime	the idea of unknowns more tangible. Discovering Balance in Equations:	- Learners will learn to put numbers into unknowns and figure out the maths sentences. They should calculate things like 2x - 3 when they know what "x" is.	Substituting intoExpressions - Learn to substitute values for unknowns and evaluate algebraic expressions. - calculate the value of expressions like 2x - 3 when x is given.



Extending Pictogram Understanding: - Progress to more complex pictograms, involving larger sets of data and a variety of symbols. - Begin to recognize more intricate number patterns within these extended pictograms and discuss them with guidance.	composite numbers and learn what makes them special. Building Vocabulary and Recognizing Prime Numbers: - Learners will continue to use and understand words about prime numbers, prime factors, and composite numbers. - They will practise figuring out whether a number up to 100 is a prime number or a composite number and remember prime numbers up to 19. Starting with Multiplying using Formal Written Methods:	factors, and composite numbers. - Determine whether a number up to 100 is prime or composite and recall prime numbers up to 19. Multiplying with Formal Written Methods: - Multiply numbers with up to 4 digits by a one or two-digit number. - Utilise formal written methods, including long multiplication, particularly when multiplying by two-digit numbers. Advanced Multiplication with Formal Methods: - Further practice multiplying numbers up to 4 digits by one or two-digit numbers.	- Explore the idea of balance by understanding that equations represent a balance between two sides. - Engage with simple equations like "2 + 3 = 5" and "4 - 2 = 2" to grasp the concept of keeping both sides equal.	Identifying Patterns and Relationships: - Learners should spot patterns and connections between numbers and unknowns. They should see how changing the value of an unknown affects the maths sentences and equations. Identify Number Patterns: - Learners will recognize and talk about number patterns where each number is a certain amount bigger or smaller than the one before it. Describing Sequences: - Learners should feel comfortable talking about where a number is in a sequence and what it's called. They should be able to add new numbers to a sequence by following the pattern	Identifying Patterns and Relationships - Recognize patterns and relationships between numbers and unknowns. - Explore how changing the value of a unknown affects the outcome in algebraic expressions and equations Identify Number Patterns: - Recognize and describe linear number patterns in sequences, highlighting the constant difference between consecutive terms. Extend Sequences: -Confidently use the terminology of position and term when describing linear sequences. -Extend existing number sequences both forwards and backwards by applying the identified pattern to predict and generate subsequent terms accurately. Generalize and Express
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- Students will learn how to multiply numbers with up to 4 digits by one or two-digit numbers. - They will begin to use formal written methods, like long Mental multiplication, especially when multiplying by two-digit numbers. **Practising** numbers. Advanced **Multiplication** with Formal Methods: - Learners will practise more efficiently. multiplication, including numbers up to 4 digits by one or two-digit numbers. - They will get better at usina formal written methods, especially when

- Extend proficiency in using formal written methods, particularly focusing on long multiplication for two-digit numbers.

# Multiplication and Division: - Develop mental maths skills to

multiply and divide - Draw upon known facts and multiplication tables to perform mental calculations

## **Recognizing Coins** and Notes:

- Identify and distinguish various coins and notes, including their denominations and unique features.

#### they've found.

## Using Mathematical language to describe sequences:

- Learners should be able to make general rules for number patterns and say them in words, like "multiply and then add" (term to term rule).

## Looking at Real-Life Sequences:

- Learners will use what they know about number patterns to solve real-life problems and maths puzzles. They should be able to find missing numbers or make predictions using these patterns.

### Pattern:

-Develop the ability to generalise linear number patterns and express rules in words based on multiplying followed by either addition or subtractions. (term to term rule)

## Solve Problems Involving Sequences: - Apply

understanding of linear number sequences to solve real-world problems and mathematical puzzles, requiring the recognition and manipulation of such sequences to find missing terms or make predictions.



multiplying by	- Recognize the		
two-digit numbers.	monetary value		
	associated with each		
<b>Beginning Mental</b>	coin and note.		
<b>Multiplication and</b>	- Apply this		
Division:	knowledge during a		
- Students will	visit to a local		
start developing	supermarket,		
their maths skills	identifying the		
to quickly multiply	currency used in		
and divide	transactions.		
numbers in their			
heads.	Making Amounts		
- They will use	with Coins and		
what they know,	Notes:		
like multiplication	- Construct specific		
tables, to do maths	monetary amounts		
quickly in their	using a combination		
minds.	of coins and notes,		
	considering different		
Introduction to	denominations.		
<b>Recognizing Coins</b>	- Demonstrate the		
and Notes:	ability to form		
- Learners will	amounts accurately		
learn to tell	and efficiently.		
different coins and	- Practise making		
notes apart,	purchases and		
including their	paying for items at		
names and special	the local		
things about them.	supermarket using		



- They will know	the appropriate		
how much each	currency.		
coin and note is			
worth, and they	Money as a re-cap		
will use this	on Decimals:		
knowledge when	- Understand the		
shopping.	connection between		
	money and decimals		
Starting to Make	by recognizing that		
Amounts with	cents represent parts		
<b>Coins and Notes:</b>	of a whole dollar.		
- Students will	- Begin to use		
begin to make	decimal notation		
specific amounts	when dealing with		
of money using	monetary amounts,		
different coins and	such as		
notes.	understanding that		
- They will show	£1.50 can be		
they can make the	represented as 1.50		
right amounts	pounds.		
quickly and			
correctly, and they	Calculating Totals		
will practise using	with Money		
money at a store.	(Including Real-Life		
	Scenarios):		
Money as an	- Calculate the total		
Introduction to	cost of items when		
Decimals:	given a list of prices		
- Learners will start	and quantities,		
to understand how	simulating real-life		
money is	shopping scenarios.		



	connected to decimals, like how cents are part of a whole dollar. - They will begin using decimal numbers when talking about money, like	- Apply addition skills to find the sum of multiple items, considering both the value of coins and notes. - Use these skills to create and manage a shopping list		
	knowing that £1.50	during the		
	is the same as 1.50	supermarket visit.		
	pounds.			
		Calculating Change:		
	<b>Calculating Totals</b>	- Determine the		
	with Money	change to be		
	(Including	received after		
	Real-Life	making a purchase		
	Scenarios):	by subtracting the		
	- Students will	total cost from the		
	learn how to find	amount paid.		
	the total cost of	- Accurately count		
	things when they	and provide change		
	have a list of	using a combination		
	prices and	of coins and notes.		
	quantities, just like	- Practice giving		
	when shopping in	and receiving		
	real life.	change during the		
	- They will add up	supermarket visit		
	the prices using	when making		
	coins and notes,	purchases.		
	and they will use			
I		-		



these skills when	Budgeting and		
making a shopping	Decision-Making:		
list for a store visit.	- Learn to make		
	informed decisions		
Learning to	when shopping by		
<b>Calculate Change:</b>	comparing prices,		
- Learners will	evaluating quality,		
figure out how	and considering		
much change they	personal preferences.		
should get after	- Set a budget for a		
buying something	shopping trip and		
by taking away the	make choices that fit		
cost from the	within the budget		
amount they paid.	constraints.		
- They will also be	- Reflect on		
able to count out	budgeting and		
the right coins and	decision-making		
notes to give as	experiences during		
change, practising	and after the		
this skill when	supermarket visit.		
shopping.			
	Practical		
Exploring	Application of		
Budgeting and	Money Skills:		
Decision-Making:	- Apply money		
- Students will	skills acquired during		
start learning how	the supermarket visit		
to make good	to real-life situations,		
choices when	such as shopping for		
shopping by	groceries, personal		
comparing prices,	items, or making		
			1



thinking about quality, and considering what they like. - They will also start setting a budget for shopping trips and making choices that stay within that budget.	everyday transactions. - Gain hands-on experience managing money, making purchases, and handling change in a practical setting.		
Applying Money Skills Practically: - Learners will use the money skills they learned when shopping for real things, like groceries or personal items, and when doing everyday money transactions. - They will get hands-on experience using money, making purchases, and giving and getting			



	change in real-life situations.				
Summer 1			Summer 2		
Ratio & Proportion		Statistics & Probability			
Encountering	Developing	Enhancing	Encountering	Developing	Enhancing
Sharing Equally: -Support learners to be able to understand and demonstrate the concept of sharing objects or items equally among a group. Aim to divide a collection of objects into equal parts and ensure that each part has the same number of items. Recognizing Proportion:	Understanding Ratios: - Students will understand what a ratio means, which is like comparing how much of one thing there is compared to another thing. For example, if there are 2 red marbles and 3 blue	Understanding Ratios: - Define what a ratio is and recognize that it represents a comparison of two or more quantities. - Express ratios in the form of "a to b" or "a:b" and understand their	Understanding Likelihood: -Help learners understand the concept of likelihood by using everyday examples. Teach them to differentiate between things that are likely to happen, like the sun rising every day,	Introducing Probability Scales: - Students will be able to learn about probability scales, a way to measure how likely something is to happen. They should understand that the scale goes from 0 (impossible) to 1 (definitely going to happen).	Understanding Probability Scales: - Develop a clear understanding of probability scales, including the concept that probabilities range from 0 (impossible event) to 1 (certain event), and how to interpret probabilities within this scale. Distinguishing Impossible and Certain Events:



-Help students recognize the idea of proportion by using concrete objects and visual aids. They will hopefully be able to compare the sizes of different groups of objects and identify when one group has more or less than the other.marbles, the ratio is 2 to 3 or 2:3. - Learners should be able to write ratios in the form of "2 to 3" or "2:3" and identify when one group has more or less than the other.significance in real-world contexts.Mixing Simple Recipes: -Introduce the concept of through simple recipes, such as making fruit squash, fruit salad or a sandwich.Simplifying Ratios: - Learners should learn how to make that be given the opportunity to follow basic instructions to combine different ingredients in the right proportions to create a simple dish or drink.marbles, the ratio is 2 to 3 or 2:3. - Learners should learn how the their simplest form by dividing both parts by their greatest common factor. - Apply this owork with and understand.Hixing Simple Recipes: - Introduce the concept of mixing and proportion through simple recipes, such as making fruit squash, fruit salad or a sandwich.Simplifying Ratios: - Learners will be given the opportunity to follow basic instructions to combine different ingredients in the right proportions to create a simple dish or drink.Simple able to procest and able to practise making ratios easier to use and understand.Using Ratios to compare different quantities or parts within a whole, such as comparing the	and things that are unlikely, like finding a rainbow in their bedroom. Exploring Simple Events: -Introduce the idea of simple events by presenting basic scenarios with two outcomes, such as flipping a coin to get either heads or tails. Help them grasp the idea that there are only a few possible outcomes in some situations. Recognizing More and Less Likely: -Teach very basic comparisons of likelihood, such as recognizing that having sunny	Introducing Impossibility and Certainty: - Learners should practise telling apart things that can never happen (0 chance) from things that are sure to happen (100% chance) in stories and maths problems. Expressing Probability as a Fraction: - Students will master the skill of showing how likely something is as a fraction. They should remember that 0 means it can't happen, and 1 means it's going to happen for sure. Simple Probabilities: - Learners should develop the ability to find out how likely simple	<ul> <li>-Learn to distinguish between events that are impossible (with a probability of 0) and events that are certain (with a probability of 1) in various real-world and mathematical scenarios.</li> <li>Expressing Probability as a Fraction:         <ul> <li>Mastering the skill of expressing probabilities as fractions, recognizing that a probability of 0 means the event cannot occur, and a probability of 1 signifies that the event is guaranteed to occur.</li> </ul> </li> <li>Calculating Simple Probabilities:         <ul> <li>Develop the ability to calculate the probability of simple events by counting favourable outcomes and total possible outcomes, and express these</li> </ul> </li> </ul>
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Using Visual Models:	Using Ratios to	number of boys to	weather is more	things are by counting	probabilities as fractions or
-Teach students to use	Compare	girls in a class.	likely during	the good outcomes and	decimals.
visual models, such as	Quantities:	- Solve problems	summer than	all the possible	
drawings or pictures, to	- Students will use	that involve finding	having snow. Use	outcomes. They can	Understanding the Probability
represent the sharing or	ratios to compare	one quantity when	simple visuals or	express the answer as a	of Complementary Events:
mixing of objects or	how many of one	the ratio and another	hands-on activities	fraction or a special kind	-Learn how to find the
ingredients. They should	thing there are	quantity are given.	to illustrate these	of number.	probability of complementary
be able to draw or identify	compared to		concepts.		events (the event not
simple visual	another thing. For	Building on the		Introducing the	occurring), such as the
representations that	example, they can	Unitary Method:	Basic Probability	Probability of Events	probability of getting tails when
illustrate equal sharing	figure out if there	- Define the unitary	Language:	not occurring:	flipping a coin versus the
and proportion.	are more boys or	method as a	-Familiarise	- Students will learn how	probability of getting heads.
	girls in a class	problem-solving	learners with simple	to find the chance of the	
Practical Application:	using ratios.	approach that	probability words	opposite happening, like	Calculating Compound
-Encourage practical	- Learners should	involves finding the	like "likely,"	getting tails when	Probabilities:
application by having	be able to solve	value of one unit and	"unlikely," "certain,"	flipping a coin instead of	-Explore the concept of
students engage in	problems where	then extending it to	and "impossible."	heads. It's like looking at	compound probabilities,
hands-on activities that	they know one	find the total.	Encourage them to	the other side of a coin!	including the probability of two
involve sharing,	part of the ratio	- Understand that	use these words to		or more events occurring
proportion, and mixing.	and need to find	the unitary method is	describe the	Introducing	together (joint probability) and
For example, they should	the other part. It's	a practical	chances of events	Probabilities of Multiple	the probability of either event
be able to share a set of	like finding missing	application of	happening in their	Events:	happening (mutually exclusive
toys equally with their	puzzle pieces.	proportions.	daily lives.	- Learners should explore	events).
peers, compare the sizes				how to figure out the	
of their portions, and help	Introduction to	Expanding		chance of more than one	
prepare a simple recipe	the Unitary	Proportion:		thing happening at the	Understanding Mode:
with guidance.	Method:			same time or one or the	



fair.

- Explain that - Learners should understand that proportion relates the unitary method one part to the whole is a way to solve and ratio compares problems. It starts one part to another with just one piece, part or parts. like one chocolate - Recognize that chip, and then proportions are used helps find out how to compare many chocolate quantities in a way chips are in the that maintains a whole cookie. consistent - Students will relationship. learn that the **Solving Proportions** unitary method is a bit like using **Problems:** proportions in real - Learn methods to life to make things solve proportions, such as cross-multiplication Introducing or equivalent fractions. **Proportion:** - Learners should - Apply these know that techniques to solve problems involving proportions relate proportions in one part to the whole thing. For various contexts,

other happening. It's like solving puzzles with probability.

#### Introducing the Mode:

- Students will define and recognize the mode, which is the number that shows up the most in a group of numbers. They should learn when it helps us understand things better.

#### Introducing the Range:

- Learners should understand that range is how far apart the highest and lowest numbers are in a group. They should develop the ability to figure out the range and why it's important.

Introducing the Median:

-Define and recognize the mode as the most frequently occurring value within a dataset or list of numbers. Learn to identify situations where mode is a useful measure of central tendency.

## **Calculating Range:**

-Understand the concept of range as the difference between the highest and lowest values in a dataset. Develop the ability to calculate the range and interpret its significance in describing data variability.

## **Determining Median:**

-Learn to find the median of a dataset by arranging the values in ascending order and identifying the middle value. Explore how the median represents the central value and is less influenced by outliers.



example, if they have 2 out of 5 apples, that's a proportion. - Students will recognize that proportions are used to keep things fair when comparing quantities, like making sure everyone gets their fair share. Solving **Proportions:** - Students will learn ways to solve proportions, like using tricks such as cross-multiplicatio n or making fractions equal. These tricks help

such as recipe scaling or map reading.

Real-World Applications of Ratio and Proportion: - Apply the concepts of ratio and

proportion to solve real-world problems related to scaling, pricing, and mixing ingredients.

- Understand how ratio and proportion are used in everyday life, from adjusting recipe quantities to determining distances on maps. - Students will learn to find the middle number when putting all the numbers in order. This middle number is called the median. They should explore how it helps find what's in the middle.

#### Introducing the Mean:

- Learners should understand the mean as the average of all the numbers. They should develop the skill to find it by adding up all the numbers and then dividing by how many there are. They should recognize why it's a good way to talk about data.

## **Comparing Averages:**

- Students will explore situations where mode, range, median, and mean can give different

## **Calculating Mean:**

-Define the mean (average) as the sum of all values in a dataset divided by the total number of values. Develop the skill to calculate the mean and recognize its utility in summarising data.

#### **Comparing Averages:**

-Explore situations where mode, range, median, and mean may give different results and understand the strengths and limitations of each measure in different contexts.

#### **Application of Averages:**

-Apply the concepts of mode, range, median, and mean to analyse and interpret real-world data, such as exam scores, income distributions, and sports statistics, to draw meaningful conclusions and make informed decisions.



find missing pieces		answers. They should	
in problems.		understand when to use	
- Learners should		each one and when not	
be able to use		to in different situations.	
these techniques			
to solve problems,		Real World Averages:	
like making more		- Learners should apply	
cookies from a		the concepts of mode,	
recipe or finding		range, median, and	
distances on a		mean to understand	
map.		real-life things like test	
		scores, how much people	
Real-World		make, or sports scores.	
Applications of		They should see how it	
Ratio and		helps make good	
Proportion:		decisions and	
- Learners should		understand the world	
use ratios and		better.	
proportions to			
solve real-life			
problems, like			
making a bigger			
batch of cookies or			
figuring out how			
much something			
should cost.			



u ra p li ir fı fı fı fı t	- Students will understand that ratios and proportions are like maths helpers in everyday life, from cooking to figuring out how far places are on a map. It's maths they use all the time.			
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