TOPIC OVERVIEW DOCUMENT

YEAR 7

TOPIC OVERVIEW:

In this unit you will study:

Pace Value and Proportion: This milestone teaches students to understand the base- 10 number system and the position of a digit determines its value. This extends to numbers larger than a million and decimals. Knowing that multiplying and dividing by 10, 100, 1000 shifts digits. Working with powers of 10. Understand zero and negative numbers. Rounding. Reading, writing, ordering and comparing numbers. Use inequalities correctly. Understand the relationship between fractions, decimals and percentages and they are different representations of the same value. Know equivalences and how to convert between these forms. Understand that a fraction represents division of the numerator by the denominator. Knowing that "percent" means 'out of 100'.
Applications of Number: Know how to add and subtract whole numbers and decimals. Recognise that subtraction is the inverse of addition. Use mental methods. written methods and calculators appropriately. Use mathematical reasoning and choose the most appropriate method. Understanding multiplication and division are inverse operations. Know and use efficient written and mental methods for multiplication and division of whole numbers and decimals. Understand and apply the order of operations. Apply multiplication and division to real-life contexts. Understand the relationship between fractions, decimals and percentages and that they are different ways of expressing parts of a whole. Convert and recognise between them fluently. Understand that finding a fraction of a quantity means multiplying the quantity by the fraction.

Key Vocabulary (T2)	**Key Vocabulary (T3)**	**Core knowledge**	**Disciplinary Skills**
Recognise, identify, describe, represent, compare, predict, continue, generate, calculate, substitute, simplify, solve, check, justify, explain, reason, generalise, relationship, pattern, rule, equivalent, increase, decrease, unknown, method, operation, inverse, sequence, systematic, consistent.	Sequence. Linear sequence. Expression. Like term Equation Sum Commutative law Product Distributive law Mean	This section develops fluency and confidence with number operations. You will add, subtract, multiply and divide whole numbers and decimals using efficient mental, written and calculator methods, recognise inverse operations, and apply the order of operations correctly. You will use mathematical reasoning to choose appropriate methods and apply calculations to real-life contexts. You will also understand the relationship between fractions, decimals and percentages, convert between them fluently, and find fractions of quantities.	This section develops your understanding of place value and number relationships. You will read, write, interpret and order large and small numbers, including integers and decimals, and understand how digit values change when multiplying or dividing by 10, 100 and 1000. You will develop fluency with fractions, decimals and percentages, including simplifying fractions, finding equivalent fractions and recognising equivalence. You will also solve multi-step numerical and real-life problems using addition, subtraction, multiplication and division, selecting appropriate methods and applying them accurately and efficiently.

Checkpoint: Vocab/ Knowledge/ Disciplinary skill(s)	**What does this assessment look like?**	**Which disciplinary skills do I need to be successful?**

TOPIC OVERVIEW DOCUMENT

Checkpoint 1: Place value	You will complete a skills check You will be reassessed during the Mastery lesson	You need to understand the value of digits, compare and order numbers, use number lines, partition numbers accurately, identify patterns and relationships, estimate and check answers, and explain your mathematical reasoning clearly.
Checkpoint 2: Fractions Decimals Percentages	You will complete a skills check You will be reassessed during the Mastery lesson	You need to recognise the relationship between fractions, decimals and percentages, convert between them accurately, compare and order values, use equivalence to solve problems, choose efficient methods, check whether answers are reasonable, and explain your mathematical reasoning clearly.
Checkpoint 3: Solving problems with addition and subtraction	You will complete a skills check You will be reassessed during the Mastery lesson	You need to interpret problems carefully, identify when to use addition or subtraction, choose efficient methods, calculate accurately, use inverse operations to check answers, solve multi-step problems, and explain your mathematical reasoning clearly.
Checkpoint 4: Solving problems with multiplication and division	You will complete a skills check You will be reassessed during the Mastery lesson	You need to identify when multiplication or division is required, choose efficient mental or written methods, recognise that multiplication and division are inverse operations, use estimation and inverse operations to check answers, interpret answers in context, and explain your mathematical reasoning clearly.
Checkpoint 5: Fractions of amounts Percentages of amounts	You will complete a skills check You will be reassessed during the Mastery lesson	You need to use proportional reasoning, recognise fraction and percentage relationships, choose efficient methods, calculate accurately, interpret problems, make connections between different representations, and estimate and check that your answers are reasonable.

Milestone assessment:

The average of the following skills checks :

Place value; Fractions decimals and percentages; Solving problems with addition and subtraction: Solving problems with multiplication and division: Fractions of amounts; Percentages of amounts

TOPIC OVERVIEW DOCUMENT

Vocab quiz:	**Knowledge tasks:**	**Disciplinary tasks:**
Sequence. Linear sequence. Expression. Like term Equation Sum Commutative law Product Distributive law Mean	This section develops fluency and confidence with number operations. You will add, subtract, multiply and divide whole numbers and decimals using efficient mental, written and calculator methods, recognise inverse operations, and apply the order of operations correctly. You will use mathematical reasoning to choose appropriate methods and apply calculations to real-life contexts. You will also understand the relationship between fractions, decimals and percentages, convert between them fluently, and find fractions of quantities.	This section develops your understanding of place value and number relationships. You will read, write, interpret and order large and small numbers, including integers and decimals, and understand how digit values change when multiplying or dividing by 10, 100 and 1000. You will develop fluency with fractions, decimals and percentages, including simplifying fractions, finding equivalent fractions and recognising equivalence. You will also solve multi-step numerical and real-life problems using addition, subtraction, multiplication and division, selecting appropriate methods and applying them accurately and efficiently.

How can I **achieve** in this topic?

- Complete tasks on SPARX
- Engage 100% in lessons
- Make good notes/examples in lessons and use them

Further research:

- Home | NRICH
- Maths - BBC Bitesize