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| Year 7 | **Topic: Unit 1 – Number skills****Period:** Autumn 1 |
| **Overview of topic:**Students will build on their knowledge from key stage 2 in dealing with numbers of various types – both through mental calculations and written calculations, and by using a calculator correctly.* Mental Maths
* Addition and Subtraction
* Multiplication
* Division
* Money and Time
* Negative numbers
* Factors, multiples and primes
* Square numbers
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| **Key** **knowledge:*** Partitioning splits the bigger number to make some easier multiplications.
* You must use the priority of operations to do calculations.
* BIDMAS – Brackets, Indices (powers), Division and Multiplication, Addition and Subtraction
* When you have only × and ÷, or only + and - then work from left to right.
* An approximation is a number that is not exact. It is close enough for it to be useful though. Use approximations to estimate the answer to calculations.
* ≈ means ‘approximately equal to’.
* You can check a subtraction calculation using the inverse operation of addition.
* You can use estimation to check the answer to a multiplication calculation. Round the numbers and then multiply.
* In the column method you write the numbers in the calculation in their place value columns.
* Long multiplication is a written method to multiply by numbers with two or more digits.
* If money received is greater than money spent, then you make a profit. If money spent is greater than money received, then you make a loss.
* You can check a division calculation using the inverse operation of multiplication.
* Long division is a written method to divide by numbers with two or more digits. It breaks down the calculation into smaller steps than short division.
* To round an amount to the nearest pound, look at the pence.
* Change is the money you get back after paying for something with more money than it costs.
* The symbol > means greater than. The symbol < means less than.
* A multiple of a number is in that number’s multiplication table.
* A Venn diagram is a way of showing sets of numbers.
* A factor is a whole number that will divide exactly into another number.
* A factor pair is two numbers that multiply together to make a number.
* A prime number has exactly two factors, 1 and itself.
* Square numbers make a square pattern of dots. To find the square of a number, you multiply it by itself.
* You can write 3 × 3 as 32. You read this as ‘3 squared’. The ‘2’ in 32 is called the power or index. The plural of index is indices.
* You can use the 𝑥2 key on your calculator to work out a square.
* A square root is a number that is multiplied by itself to produce a given number.
* Finding the square root is the inverse of squaring.
* You can use the √ key on your calculator to find a square root.
 | **Key skills:** * Use the priority of operations, including brackets
* Use multiplication facts up to 10 × 10 and the laws of arithmetic to do mental multiplication and division
* Multiply by multiples of 10, 100 and 1000
* Make an estimate to check an answer
* Use inverse operations to check an answer
* Use a written method to add and subtract whole numbers of any size
* Round whole numbers to the nearest 10 000, 100 000, 1 000 000.
* Use an estimate to check an answer to a multiplication
* Use a written method to multiply whole numbers
* Use a written method to divide whole numbers
* Use inverse operations to check an answer
* Round money to the nearest pound or penny
* Interpret the display on a calculator in different contexts
* Use a calculator to solve problems involving money and time
* Order positive and negative numbers
* Add and subtract positive and negative numbers
* Begin to multiply with negative numbers
* Find all the factor pairs for any whole number
* Identify common factors, the highest common factor and the lowest common multiple
* Recognise prime numbers
* Recognise square numbers
* Use a calculator to find squares and square roots
* Use the priority of operations, including powers
* Use index form for powers
* Do mental calculations with squares and square roots

**Key vocabulary:**

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| Tier 2 | Tier 3 |
| * Add
* Subtract
* Multiply
* Divide
* Mental
* Operations
* Brackets
* Decimal
* Estimate
* Rounding
* Remainder
* Digits
* Negative
* Ordering
* Greater than
* Less than
* Factors
* Multiples
* Prime
* Common
* Square
* Cubes
* Powers
* Roots
 | * Arithmetic
* Place Value
* Inverse
* Integers
* Exponents
* Index form
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| **Co-curricular opportunities:** Number skills are a vital key skill across multiple other areas of study including Science, Geography, Technology, PE and many others | **Key reading skills taught and key texts:**Clarify – identify key vocabulary in questions and be fluent in understanding the meaningsQuestion – from a worded question, what Maths is required to be done in order to get a solution?**Wider Reading Opportunities/Links:** |
| **How can I use this information at home?*** Conversation starters with your children to discuss their learning
* Support your child in carrying out independent research around the topic
* Visit your local library (or BorrowBox), museums, or other locations to explore the topic
* Promote books/other texts that explore this topic (see reading section)
* Help your child to learn the key vocabulary
* Encourage practice and consolidation through completion of homework, TTRockStars and using other online learning platforms
* Encourage them to practice their mathematical skills in a variety of everyday situations wherever the opportunity arises.
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