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| **What will we be learning?****Number:** Place value and number, Applying four operations, Working with percentages, Rounding and standard form, Factors, multiples and listing strategies. | **Why this? Why now?**Students consolidate their numerical and mathematical capability from key stage 3 and extend their understanding of the number system to include powers and roots. Students develop their ability to select and use appropriate calculation strategies to solve increasingly complex problems, including exact calculations involving the use of standard form. Students begin to assess the validity of an argument and the accuracy of a given way of presenting information through the application and interpretation of limits of accuracy. Pupils also explore the ways to enter and interpret numbers in standard form on a scientific calculator. | **Key Words:**Place ValuePositive/NegativeIntegerImproper fractionProper fractionMixed numberDecimalReoccurringTerminatingProductEstimationApproximationSignificant figuresDecimal placePercentagePercentage changeReverse percentageUpper boundLower boundLimits of accuracyPrime numbersFactors (divisors), MultiplesHighest common factorLowest common multiplePrime factorisation Unique factorisation theoremProduct rule |
| **What will we learn?*** Order positive and negative integers.
* Use the symbols =, ≠, <, >, ≤, ≥.
* Calculate exactly with fractions.
* Work interchangeably with terminating decimals and their corresponding fractions.
* Change recurring decimals into their corresponding fractions and vice versa.
* Apply the four operations, including formal written methods, to integers, decimals and simple fractions, and mixed numbers.
* Estimate answers. Check calculations using approximation and estimation, including answers obtained using technology.
* Interpret percentages and percentage changes as a fraction or decimal and interpret these multiplicatively. Work with percentages greater than 100%.
* Express one quantity as a percentage of another. Compare two quantities using percentages.
* Interpret fractions and percentages as operators.
* Round numbers and measures to an appropriate degree of accuracy.
* Use inequality notation to specify simple error intervals due to truncation or rounding.
* Apply and interpret limits of accuracy including upper and lower bounds.
* Calculate with and interpret standard form.
* Use the concepts of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation, and the unique factorisation theorem.
* Use of the product rule for counting.
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| **What opportunities are there for wider study?****Dr Frost Maths** is the primary resource that we use for homestudies and it has lots of useful revision tools. Alongside this, you can search for a specific topic and you can either practise some questions online or watch a video. Under the resources section, there is also a “Full Coverage” document for some topics that have a huge bank of exam questions on the topic in question. <https://www.drfrostmaths.com/course.php?sid=-10> **Corbett Maths** - video links, practice questions and textbook exercises with answers available. <https://corbettmaths.com/contents/> **MathsGenie** - videos and exam questions along with worked solutions.<https://www.mathsgenie.co.uk/advance-information.html>Investigating different number systems.Limits of accuracy in building.The scale for the universe (standard form) <https://htwins.net/scale2/>**Careers Link**Finance – interest values, election numbers, house prices, loans, car valuationsAccountant. |
| **How will I be assessed?**Half Term assessments.Homestudy tasks Quality of classwork |