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| **F Unit 4: Fractions and percentages** | **Road Map** | | | | | |
| In this unit you will learn about number. The aims are as follows:  **LG1**: Knowledge  **LG2**: Application  **LG3**: Skills | Assessment Grades |  |  | | | |
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| **Themes** | **Learning Goals/Outcomes/Content** | | |  |  |  |
| 4a Fractions | Use diagrams to find equivalent fractions or compare fractions; | | |  |  |  |
| Write fractions to describe shaded parts of diagrams; | | |  |  |  |
| Express a given number as a fraction of another, using very simple numbers, some cancelling, and where the fraction is both < 1 and > 1; | | |  |  |  |
| Write a fraction in its simplest form and find equivalent fractions; | | |  |  |  |
| Order fractions, by using a common denominator; | | |  |  |  |
| Compare fractions, use inequality signs, compare unit fractions; | | |  |  |  |
| Convert between mixed numbers and improper fractions; | | |  |  |  |
| Add and subtract fractions; | | |  |  |  |
| Add fractions and write the answer as a mixed number; | | |  |  |  |
| Multiply and divide an integer by a fraction; | | |  |  |  |
| Multiply and divide a fraction by an integer, including finding fractions of quantities or measurements, and apply this by finding the size of each category from a pie chart using fractions; | | |  |  |  |
| Understand and use unit fractions as multiplicative inverses; | | |  |  |  |
| Multiply fractions: simplify calculations by cancelling first; | | |  |  |  |
| Divide a fraction by a whole number; | | |  |  |  |
| Divide fractions by fractions. | | |  |  |  |
| 4b Fractions, decimals and percentages | Recall the fraction-to-decimal conversion; | | |  |  |  |
| Convert between fractions and decimals; | | |  |  |  |
| Convert a fraction to a decimal to make a calculation easier, e.g. 0.25 × 8 = | | |  |  |  |
| ×8,or  × 10 = 0.375 × 10; | | |  |  |  |
| Recognise recurring decimals and convert fractions such as ,  and  into recurring decimals; | | |  |  |  |
| Compare and order fractions, decimals and integers, using inequality signs; | | |  |  |  |
| Understand that a percentage is a fraction in hundredths; | | |  |  |  |
| Express a given number as a percentage of another number; | | |  |  |  |
| Convert between fractions, decimals and percentages; | | |  |  |  |
| Order fractions, decimals and percentages, including use of inequality signs. | | |  |  |  |
| 4c Percentages | Express a given number as a percentage of another number; | | |  |  |  |
| Find a percentage of a quantity without a calculator: 50%, 25% and multiples of 10% and 5%; | | |  |  |  |
| Find a percentage of a quantity or measurement (use measurements they should know from Key Stage 3 only); | | |  |  |  |
| Calculate amount of increase/decrease; | | |  |  |  |
| Use percentages to solve problems, including comparisons of two quantities using percentages; | | |  |  |  |
| Percentages over 100%; | | |  |  |  |
| Use percentages in real-life situations, including percentages greater than 100%: | | |  |  |  |
| Price after VAT (not price before VAT); | | |  |  |  |
| Value of profit or loss; | | |  |  |  |
| Simple interest; | | |  |  |  |
| Income tax calculations; | | |  |  |  |
| Use decimals to find quantities; | | |  |  |  |
| Find a percentage of a quantity, including using a multiplier; | | |  |  |  |
| Use a multiplier to increase or decrease by a percentage in any scenario where percentages are used; | | |  |  |  |
| Understand the multiplicative nature of percentages as operators.  **Links:**  LG1: You will use the processes that you learn in this topic as the building blocks of all future work involving proportions.  LG2: You will apply the processes from this topic to real-life situations, such as questions about interest and price reductions.  LG3: You will use your problem-solving skills and mastery of fractions and percentages to solve complex Mathematical problems such as comparing two investments. | | |  |  |  |

**Links:**

LG1: It is vital that you know how to work with different types of numbers with confidence and fluency.

LG2:.You will apply the number processes from this topic to lots of other areas of Maths.

LG3: The skills to solve complex problems using your Mathematical knowledge will be needed throughout GCSE Maths.