

Guidance for teachers – Upper KS2 Fractions, Decimals, Percentages

Segment 3.10 Linking fractions, decimals and percentages

These short videos are intended to provide your pupils with interactive lessons whilst they are learning from home. You can choose how regularly you set them for your class. Some of the learning might be consolidation and practice which aids confidence and retrieval and helps build firm foundations for moving on to future areas of mathematics. It is important that pupils experience these in the suggested order. They have been designed to be a coherent sequence of learning which builds on previous understanding and exemplify a [teaching for mastery approach](#).

General features of a teaching for mastery approach, which can be found within these lessons:

- **Stem sentences** which promote precise mathematical vocabulary and generalisations for all pupils.
- **Representations** which are carefully chosen and can be concrete, iconic or abstract and that move between the three.
- **Opportunities for deepening understanding for all pupils** - using small steps of learning enables pupils to learn together and gain deep conceptual understanding.
- **Independent practice and retrieval** - you could ask the children to send you their practice activities so that you can check understanding.

Lesson 10 – This teaching point considers how to calculate percentages of quantities when the value of the whole is known. The following generalised statements are worked towards: ‘To find 50% of a number, halve it.’ ‘To find 10 % of a number, divide it by ten.’ and ‘To find 1% of a number, divide it by one hundred.’

Lesson 11 – Building on the generalised statements of the previous lesson, other percentages of amounts are now looked at, such as 25% and 75% and multiples of 10%. A ratio table and a double number line are used to support using known percentages to work out those that are less obvious, such as 69%, where we can add together or subtract from known percentages.

Lesson 12 – Examples are explored where a percentage part is known, and the children must calculate the whole amount from the part. Questions are posed and bar models are used to deepen children’s sense of the situations explored, so that they approximate and see the structure of the problem rather than rely on a process to solve it.

Lesson 13 – Using ‘I’m thinking of a number.’ further examples are looked at when a percentage part is known and 100 % must be calculated. Children are encouraged to draw their preferred model each time such as a bar model or a double line so that they develop confidence with it. Ratio tables can be used to summarise the situations.

Lesson 14 – This is the last lesson in this sequence of lessons on fractions decimal and percentages. In this lesson the children are given a slightly more complex scenario where the percentage reduction is given and they are asked to find the original amount, for example: ‘A coat has 10% off in a sale. The price is now £45. What was the original price?’.

These lessons have been planned from the NCETM Mastery PD Materials. Please access the original materials [here](#).

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