

Guidance for teachers – Upper KS2 Fractions

Lessons 1-6 Finding equivalent fractions and simplifying fractions

These short videos are intended to provide your pupils with interactive lessons while 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 onto 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 exemplifies 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 pupils to send you their practice activities so that you can check understanding. You could also set supplementary activities to extend practice and provide some fluency practice with multiplication facts.

Lesson 1 This lesson starts by reminding the pupils of the concept how to identify a fraction of an amount with the support of the stem sentence: **'The whole is divided into ___ equal parts and we have ___ of them.'** It then considers when two fractions are equal and how these can be represented using the area model and then as a position on a number line. At the end of this lesson, they are asked to show a fraction using the three models of quantity, area and number line.

Lesson 2 Pupils are then shown another way to visualise fractions using measuring and pouring. The key is to develop proportional thinking and pupils are encouraged to get some water and a straight-sided container to support! The link to the number line is made and the term equivalent fraction is used for the first time using the generalisation: **'Sometimes two fractions have the same value. We call these equivalent fractions.'**

Lesson 3 In this lesson the relationship between the numerator and denominator in equivalent fractions is explored. With the size of the whole kept constant, and the same proportion of the shape shaded, pupils are encouraged to see how fractions that are equivalent can be used to describe the same shaded area. The focus is where each numerator forms the same part of the whole.

Lesson 4 Once pupils are secure in their understanding of the vertical relationship of equivalent fractions, the shift in this lesson is to look at the horizontal relationship between each equivalent fraction. The new learning point is that the fraction preserves its value only when both the numerator and denominator are scaled by the same factor.

Lesson 5 Building on the multiplicative relationship between the numerator and denominator in equivalent fractions, examples are used for the pupils to practise seeing both the horizontal and vertical connections.

Lesson 6 This lesson introduces equivalent fractions for non-unit fractions, and connections are made to the multiplicative relationship from the previous three lessons.



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

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