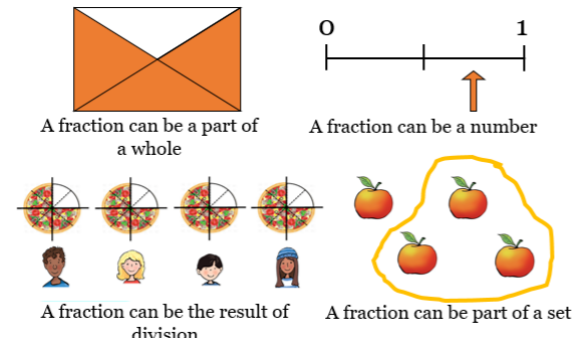


# Year 4 Unit 6: Fractions (4 weeks)

**Before you start...**

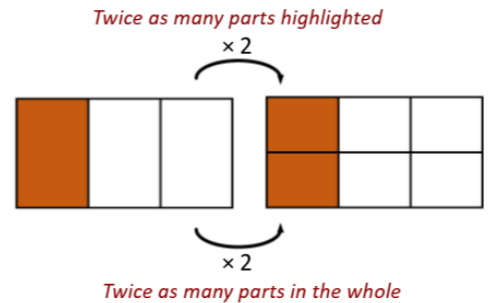
- What representations of unit and non-unit fractions are your pupils familiar with?
- How do pupils compare and order unit fractions, and fractions with the same denominators?
- What equivalent fractions do pupils know and how do they represent and explain these?

**Video: Interpreting fractions in different ways**



**Video: Finding fractions of quantity**

$$\frac{1}{3} \times 2 = \frac{2}{6} \div 3 = \frac{2}{18} \times 3 = \frac{2}{6}$$



**Video: Fractions as the result of division**

**Video: Representing mixed numbers and improper fractions**



**Video: Equivalent fractions Part 1**

**Video: Equivalent fractions Part 2**

L9 is the suggested time for a consolidation lesson to secure understanding around each of the interpretations of fractions. You may wish to use this earlier to explore one (or more) of the interpretations in further detail.

**Interpreting fractions in different ways (1)**  
L1 Recognise different interpretations of fractions  
L2&5 Identify fractions as part of a set or quantity  
L3&4 Identify fractions as part of a whole shape

The unit starts exploring different ways of interpreting and bringing meaning to fractions. This is an opportunity to find out current understanding. L2-7 explores each interpretation in depth, starting with unit fractions then non-unit fractions. Opportunities are taken to explore equivalent fractions as they arise in the models, before they are a focus in L6.

? How will you use the information gathered in L1 to inform and adapt L2-7?

**Interpreting fractions in different ways (2)**  
L6 Find equivalent fractions  
L7 Identify fractions as 'the result of division'  
L8 Compare and order fractions

Experiences with equivalent fractions should go beyond teaching 'multiply the numerator and denominator by the same value'. Focus on identifying relationships *between* and *within* fractions, noticing patterns and making connections with multiplication and division. When comparing and ordering fractions, pupils apply their understanding of each interpretation and use a variety of models to develop different strategies for reasoning about the relative size of fractions.

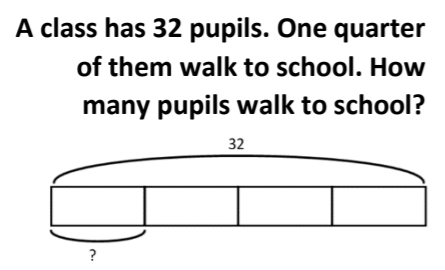
? What misconceptions might a pupil have when comparing fractions; how can you address these and use them as learning opportunities?

**Understanding mixed numbers and improper fractions**  
L10 Recognise mixed numbers  
L11 Recognise improper fractions  
L12 Convert mixed numbers to improper fractions

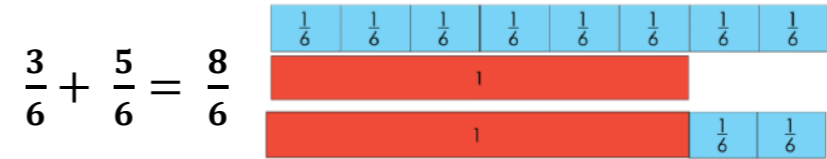
So far, the focus has been on fractions with a value less than 1. Pupils apply their knowledge of interpretations explored so far when representing mixed numbers and improper fractions using a range of models.

? Are pupils aware that fractions can be greater than one? How will you use Maths Meetings and transitions to develop fluency around this?

**Video: Fraction word problems: bar modelling**



**Teaching fractions with understanding**  
This article illustrates different perspectives through which children see fractions, considering ways to teach fractions to develop a depth of understanding.



**Video: Adding and subtracting fractions**

**Solving problems involving fractions of a quantity**  
L18 Solve problems involving unit fractions  
L19 Solve problems involving non-unit fractions  
L20 Solve multi-step problems by comparing non-unit fractions

Experiences with fractions of quantity should go beyond the procedure of 'dividing by the denominator and multiplying by the numerator'. Constructing bar models allow pupils to see part-whole relationships and the steps of the procedure.

? How will you model the process of creating bar models, using known and unknown values from problems?

**Adding and subtracting fractions with the same denominator**  
L13 Add fractions  
L14 Subtract fractions  
L15 Add fractions with an answer greater than one  
L16 Subtract fractions including those greater than one

Pupils extend their learning to calculate using fractions. Experiences with adding and subtracting fractions (with the same denominator) should go beyond teaching the procedure of 'just add the top numbers'. To deepen conceptual understanding, pupils are exposed to multiple representations, encouraging them to make connections between mixed numbers and improper fractions.

? How will you use the suggested representations to address the misconception of adding/subtracting the denominators (e.g.  $\frac{1}{2} + \frac{1}{2} = \frac{2}{4}$ )?

Fractions are full of procedures! Teaching procedures without opportunities to construct understanding and reasoning leaves pupils relying on memorising abstract rules which are often mixed up. Watch the videos to consider what models and images you will use to deepen pupils' understanding of each procedure.

L17 is the suggested time for a consolidation lesson to secure understanding around adding and subtracting fractions before applying this to word problems.