Improper fractions and mixed numbers (2)

National Curriculum attainment targets

- Recognise mixed numbers and improper fractions and convert from one from to the other and write mathematical statements >1 as a mixed number [for example $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]
- Connect fractions > 1 that simplify to integers with division and other fractions > 1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions*
- * Notes and guidance (non-statutory)

Prerequisites for learning

Pupils need to:

- recognise improper fractions
- \bullet understand when a fraction shows a whole, e.g. $\frac{4}{4}$

Vocabulary

improper fraction, mixed number, whole, division

Lesson objectives

- Recognise mixed numbers and improper fractions and convert from one form to the other
- Connect fractions > 1 that simplify to integers with division and other fractions > 1 to division with remainders

Success criteria

Pupils can:

- read the improper fraction
- understand how many of that fraction make a whole
- convert to a mixed number
- write the division calculation



Connect

Year 5, Unit 10, Week 2

Getting Started

• Choose an activity from Number - Fractions.



Resources

mini whiteboard, pen and eraser (per child)

- Display: Slide 1. Say: Both these images show us $\frac{15}{4}$.
- Say: Using the images, write the fraction addition and the mixed number that go with $\frac{15}{4}$.
- Check children's answers and discuss as a class. Write $\frac{15}{4} = \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{3}{4} = 3\frac{3}{4}$. Point to the images as you write the addition so children clearly see the connection.
- Display: Slide 2. Repeat for $\frac{20}{6}$.
- Point to $\frac{20}{6}$ and say: We can also use division to change improper fractions to mixed numbers. We want to know how many wholes there are in $\frac{20}{6}$ so we divide by 6 as six sixths make one whole.
- Write 20 ÷ 6 = on the board. Ask: How many sixes in are in 20? (three)
- On the number line, draw a jump from 0 to 1, then 1 to 2 and then 2 to 3. On each jump write $\frac{6}{6}$.
- Say: Each jump shows us six sixths. Write 3 as part of the answer.
- Ask: How many are left over or remaining? (two) Draw a jump from 3 to $\frac{20}{6}$ on the number line. Say: As we are working with sixths our remainder is not just 2 but $\frac{2}{6}$, so the final answer is $3\frac{2}{6}$. Write $\frac{2}{6}$ in the answer space.
- Display: Slide 3.



2

- Ask: What is the division calculation that goes with $\frac{16}{5}$ to convert it to a mixed number? Establish that it is $16 \div 5$.
- Say: Work out this fraction division, and use the number line to help you. Ask a pair to share their answer and draw the relevant jumps on the number line. Write the answer $3\frac{1}{5}$ on the board.

• Display: Slide 4.

4

5

- Say: Work out this fraction division.
 - Ask a child to share their answer and write the answer $3\frac{1}{3}$ on the board.
- Display: Slide 5. Repeat for $\frac{13}{4}$ if appropriate.



Overcoming Barriers

• If children are finding this difficult, focus on understanding and representing improper fractions and mixed numbers visually.