

Convert improper fractions to mixed numbers

Notes and guidance

In the previous step, children converted mixed numbers to improper fractions. In this small step, they convert the other way, from improper fractions to mixed numbers.

At this stage, children explore this concept predominantly through the use of pictorial representations and concrete manipulatives, for example counters and bar models, linking back to work done on division with remainders in Spring Block 1. Children use their times-tables knowledge to find the integer part of a mixed number, with the remainder as the fractional part.

The learning from this step will be revisited and built on in Year 5.

Things to look out for

- Fluent knowledge of times-tables will greatly support children in this step. Times-table grids could support children who are not yet fluent, allowing them to focus on the key learning of this step.
- Children may partially convert improper fractions, giving an answer as an integer with an improper fraction, for example $\frac{11}{5} = 1 \frac{6}{5}$

Key questions

- How do you know _____ is an improper fraction?
- How many quarters are there in $\frac{15}{4}$?
- How many quarters are there in $1\frac{1}{2}$ wholes?
- How many groups of 4 are there in 15? What is the remainder?

So how many groups of $\frac{4}{4}$ are there in $\frac{15}{4}$? What is the remainder?

How can you write that as a mixed number?

Possible sentence stems

- There are _____ in 1 whole.

There are _____ groups of _____ and _____ remaining.

so $\frac{\square}{\square}$ as a mixed number is _____

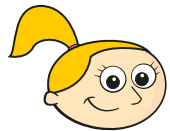
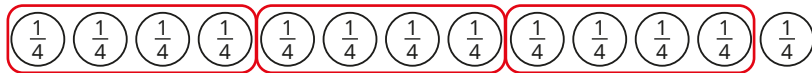
National Curriculum links

- This small step is not taken from the Year 4 National Curriculum. It is included to take into account the non-statutory DfE Ready to Progress guidance.

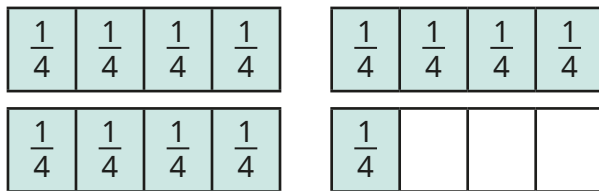
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Key learning

- Eva and Jack are converting $\frac{13}{4}$ to a mixed number.



There are 3 groups of four quarters and 1 quarter remaining.



There are 3 wholes and 1 quarter.



Write $\frac{13}{4}$ as a mixed number.

- Convert the improper fractions to mixed numbers.

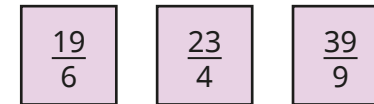


- Whitney is converting $\frac{17}{5}$ to a mixed number. Here are her workings.

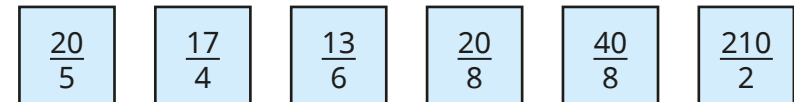


$$\begin{aligned} 15 \div 5 &= 3 \\ 17 \div 5 &= 3 \text{ r}2 \\ \frac{17}{5} &= 3\frac{2}{5} \end{aligned}$$

Use Whitney's method to convert the improper fractions to mixed numbers.



- Which of these improper fractions are equivalent to an integer?



How do you know?

Convert the other improper fractions to mixed numbers.

- Convert the improper fractions to mixed numbers.



What do you notice?

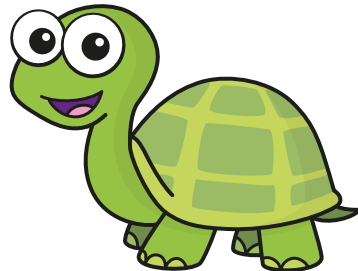
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Reasoning and problem solving

Tiny is converting $\frac{9}{4}$ to a mixed number.



$\frac{9}{4}$ is equivalent to $1\frac{5}{4}$



What mistake has Tiny made?
What is the correct answer?

$$2\frac{1}{4}$$

$\frac{1617}{7}$ is equivalent to 231

Use this fact to convert $231\frac{1}{7}$ to an improper fraction.

What improper fraction is equivalent to 232?

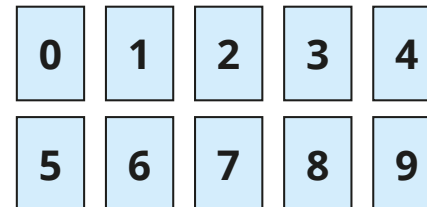
How do you know?

$$\frac{1618}{7}$$

$$\frac{1624}{7}$$

Use the digit cards to complete the statement in as many ways as possible.

You may use each digit card only once each time.



$$2 < \frac{\square\square}{5} < 4\frac{3}{5}$$

10 solutions from $\frac{12}{5}$ to $\frac{21}{5}$