

Partition a mixed number

Notes and guidance

In this small step, children further develop their understanding of mixed numbers.

Children explore partitioning mixed numbers in different ways – a skill that will be vital for later steps in this block. The key focus is to ensure that children can confidently partition a mixed number into its whole and fractional parts. Part-whole models and bar models are key representations that allow children to see how a mixed number is being partitioned. Once confident with this form of partitioning, children partition a mixed number into a whole number and a mixed number (for example, $3\frac{1}{4} = 2 + 1\frac{1}{4}$) or a mixed number and a fraction (for example, $2\frac{3}{4} = 2\frac{1}{4} + \frac{2}{4}$).

Things to look out for

- Children may mistake mixed numbers for improper fractions, particularly if their presentation is not clear, for example mistaking $2\frac{3}{4}$ for $\frac{23}{4}$
- Children need to be secure in the fact that all whole numbers can be made up of fractions, for example 1 whole = $\frac{3}{3}$
- Children may be less confident with non-standard partitions, for example $2\frac{3}{4} = 2\frac{1}{4} + \frac{2}{4}$

Key questions

- What is a mixed number?
- What does each part of a mixed number represent?
- How many wholes are there in the mixed number _____?
- What is the fractional part of _____?
- How can you partition the mixed number into wholes and a fraction?
- How many other ways could you partition the mixed number?

Possible sentence stems

- There are _____ wholes.
- There are $\frac{\square}{\square}$
- The mixed number is _____ $\frac{\square}{\square}$
- _____ can be partitioned into _____ wholes and $\frac{\square}{\square}$

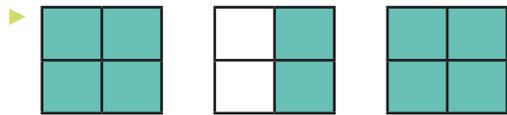
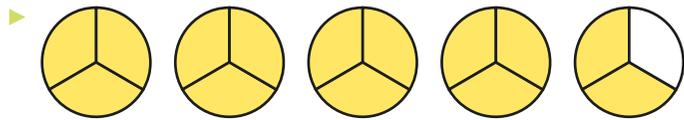
National Curriculum links

- 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.

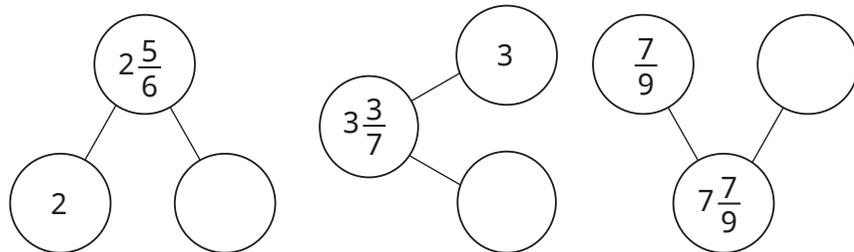
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Key learning

- What mixed number is shown in each diagram?



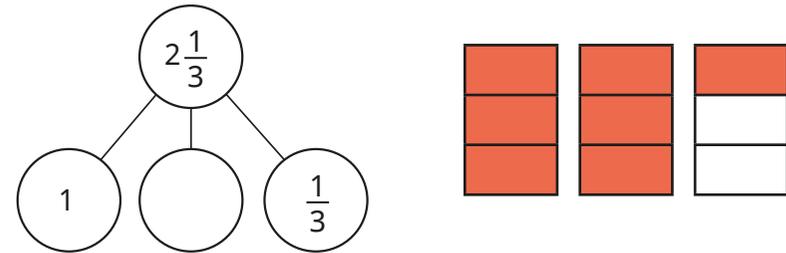
- Complete the part-whole models to show the wholes and fractions in the mixed numbers.



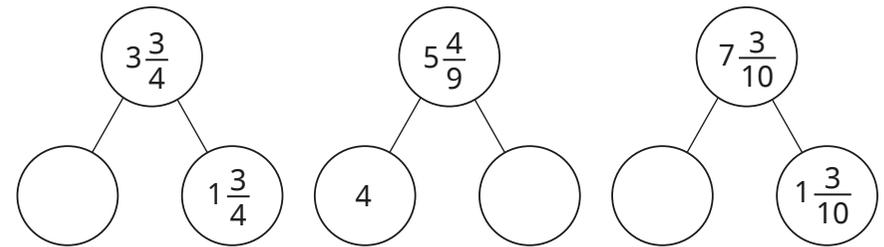
- Fill in the missing wholes and fractions.

$4\frac{4}{5} = 4 + \frac{\square}{\square}$
 $9\frac{5}{6} = \text{---} + \frac{5}{6}$
 $6\frac{3}{10} = \text{---} + \frac{\square}{\square}$

- Use the diagram to help you complete the part-whole model.



- Complete the part-whole models.



- Fill in the missing numbers.

$4\frac{4}{5} = 4\frac{1}{5} + \frac{\square}{\square}$
 $4\frac{4}{5} = 4\frac{2}{5} + \frac{\square}{\square}$
 $4\frac{4}{5} = 4\frac{\square}{5} + \frac{1}{5}$
 $2\frac{6}{7} = 2\frac{1}{7} + \frac{\square}{\square}$
 $2\frac{6}{7} = 2\frac{3}{7} + \frac{\square}{\square}$
 $2\frac{6}{7} = \text{---}\frac{4}{7} + \frac{\square}{\square}$

- Partition $3\frac{2}{3}$ in as many different ways as you can.

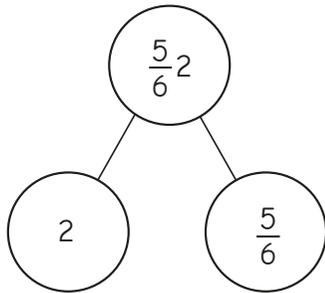
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Reasoning and problem solving

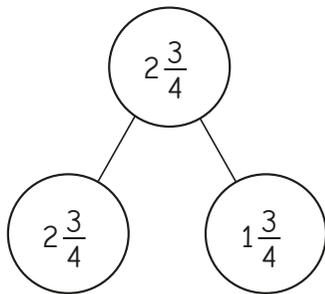


Tiny has drawn some part-whole models of mixed numbers.

A



B



A: $2\frac{5}{6}$ in whole

B: either

2 and $\frac{3}{4}$

or

1 and $1\frac{3}{4}$
in the parts

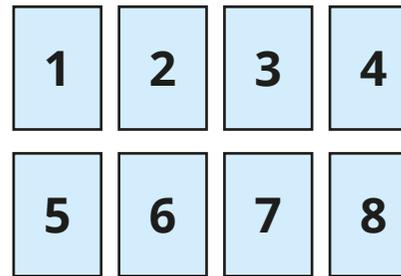
What mistakes has Tiny made?
Correct the mistakes.



Use the digit cards to complete the statements.



You can use each card once only.



A

$$6\frac{7}{9} = \square + \square \frac{\square}{9}$$

B

$$6\frac{7}{9} = \square \frac{\square}{9} + \frac{\square}{9}$$

Find all the possible solutions.

four possible solutions for each:

A: 1, 5 and 7

5, 1 and 7

4, 2 and 7

2, 4 and 7

B: 6, 3 and 4

6, 4 and 3

6, 5 and 2

6, 2 and 5