

Compare and order mixed numbers

Notes and guidance

In this small step, children compare and order mixed numbers.

Before comparing mixed numbers, it may be appropriate to compare proper fractions to revise the understanding that, when the denominators are the same, the greater the numerator, the greater the fraction. Diagrams, bar models and number lines are effective tools when comparing fractions and mixed numbers.

Children compare mixed numbers where the whole number is different, recognising that the greater the whole number, the greater the mixed number. They then compare mixed numbers where the whole number is the same.

Once children are secure in comparing mixed numbers, they can move on to putting them in order.

Things to look out for

- Children may not be secure in their understanding of how to compare proper fractions.
- Some children may compare the fraction first rather than the whole number, for example $2\frac{4}{5} > 3\frac{1}{5}$ because $\frac{4}{5} > \frac{1}{5}$
- If children are not confident in counting in fractions on a number line, they may find it difficult to place and compare fractions using this representation.

Key questions

- How is comparing mixed numbers similar to comparing proper fractions? How is it different?
- Are the whole numbers the same?
- Which is the greater whole number?
- If the whole numbers are the same, what do you need to compare?
- Which is the greater fraction? How do you know?
- How do you know the mixed numbers are in order?

Possible sentence stems

- First, I will compare the _____
If they are the same, I will compare the _____
- If the denominator is the same, the _____ the numerator, the _____ the fraction.

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

- Which fraction is greater, $2\frac{1}{6}$ or $1\frac{5}{6}$?

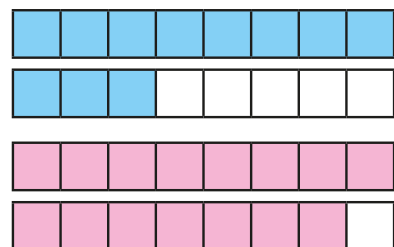


How do you know?

- Draw bar models to help you compare the mixed numbers.

$$1\frac{3}{4} \bigcirc 2\frac{1}{4} \quad 4\frac{1}{2} \bigcirc 2\frac{1}{2} \quad 3\frac{3}{8} \bigcirc 1\frac{7}{9}$$

- Write $<$ or $>$ to compare the mixed numbers.



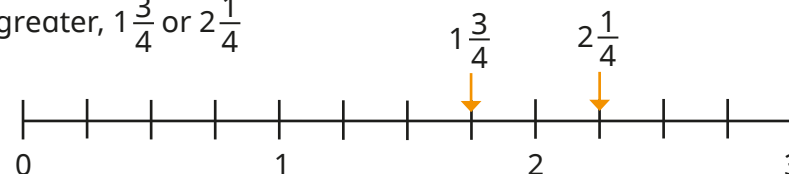
$$1\frac{3}{8} \bigcirc 1\frac{7}{8}$$

- Write $<$ or $>$ to compare the mixed numbers.

You can draw bar models to help you.

$$2\frac{1}{3} \bigcirc 2\frac{2}{3} \quad 2\frac{7}{10} \bigcirc 2\frac{1}{10}$$

- Use the number line to decide which mixed number is greater, $1\frac{3}{4}$ or $2\frac{1}{4}$



- Draw a number line to help compare the mixed numbers.

$$2\frac{2}{5} \bigcirc 2\frac{4}{5} \quad 1\frac{5}{7} \bigcirc 1\frac{2}{7}$$

- Mo is comparing mixed numbers.



I compare the wholes and then the fractions.

$$\begin{aligned} 1 &= 1 \\ \frac{3}{8} &< \frac{5}{8} \\ \text{So } 1\frac{3}{8} &< 1\frac{5}{8} \end{aligned}$$

Use Mo's method to compare the mixed numbers.

$$2\frac{3}{5} \bigcirc 2\frac{4}{5} \quad 1\frac{3}{5} \bigcirc 2\frac{3}{5} \quad 5\frac{7}{10} \bigcirc 5\frac{1}{10}$$

- Put the mixed numbers in order, starting with the smallest.

$$1\frac{3}{4}, 2\frac{3}{4}, 1\frac{1}{4}, 3\frac{3}{4}, 2\frac{1}{4}$$

$$15\frac{4}{7}, 15\frac{6}{7}, 15\frac{3}{7}, 16\frac{1}{7}, 15\frac{1}{7}$$

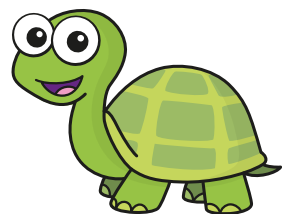
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Reasoning and problem solving

Tiny is comparing mixed numbers.

$$3\frac{1}{10} < 2\frac{9}{10}$$

$2\frac{9}{10}$ is greater,
because $\frac{9}{10}$ is greater
than $\frac{1}{10}$

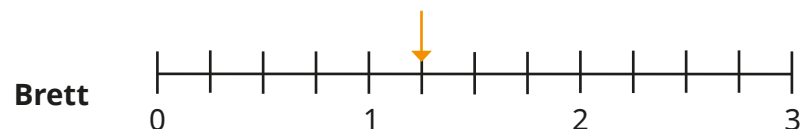


Do you agree with Tiny?
Explain your answer.

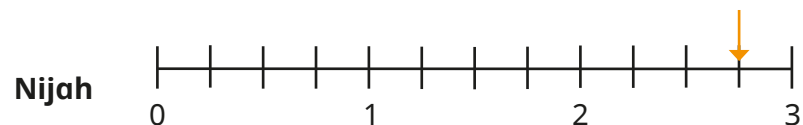
No

Brett and Nijah are counting in fractions on a number line.

Brett starts at the arrow and counts forwards in quarters four times.



Nijah starts at the arrow and counts backwards in quarters four times.



Who finishes on the greater number?

Brett