

Order fractions, decimals and percentages

Notes and guidance

In Year 5, children compared and ordered decimal numbers with up to 3 decimal places. In Year 6 Autumn Block 3, they ordered fractions with the same numerator or denominator. In this small step, they use their conversion skills from recent steps to order and compare fractions, decimals and percentages.

Children explore a range of strategies to compare and order numbers, including converting to the same form. Ask children to discuss if they prefer converting amounts to decimals, percentages or fractions and why. Children also look at strategies such as comparing amounts to a half and whether some amounts are closer or further away from the whole.

For consistency, use the word “greatest” rather than “biggest” or “largest” when comparing numbers.

Things to look out for

- Children may decimalise the percentage, for example 0.67%.
- Children may turn numerators into decimals or percentages even if the denominator is not 100, for example $\frac{45}{50} = 0.45 = 45\%$.

Key questions

- What fraction/decimal/percentage is _____ equivalent to?
- Which is the greater amount, _____ or _____? How do you know?
- Which of the amounts are greater than a half?
- Which of the amounts is closer to 1 whole?
- Where do these amounts go on a number line?
- Is it easier to convert the numbers to fractions, decimals or percentages?

Possible sentence stems

- _____ is greater/smaller than one half, and _____ is smaller/greater than one half, so _____ is greater/smaller than _____
- _____ is equivalent to _____, so it is greater/smaller than _____

National Curriculum links

- Compare and order fractions, including fractions >1
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

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Key learning

- Teddy knows that $\frac{11}{20}$ is greater than a half and 42% is less than a half because it is less than 50%, so $\frac{11}{20}$ is greater than 42%. Use Teddy's method to write "greater" or "less" to complete the sentences.

- ▶ 0.45 is _____ than $\frac{16}{30}$
- ▶ $\frac{251}{500}$ is _____ than 15%.
- ▶ 50% is _____ than 0.309
- ▶ $\frac{13}{24}$ is _____ than 0.5

- Aisha knows that $\frac{9}{10}$ is closer to 1 whole than a half, but 52% is closer to a half than 1 whole, so $\frac{9}{10}$ is greater than 52%. Use Aisha's method to write <, > or = to compare the amounts.

$$0.61 \bigcirc 95\% \quad 0.809 \bigcirc \frac{26}{50} \quad 61\% \bigcirc \frac{33}{35}$$

- Kim converts $\frac{13}{20}$ to $\frac{65}{100}$, which is equivalent to 65%.

She uses this to recognise that $\frac{13}{20} < 67\%$.

Use Kim's method to write <, > or = to compare the amounts.

$$\frac{34}{50} \bigcirc 68\% \quad \frac{24}{25} \bigcirc 98\% \quad \frac{4}{10} \bigcirc 38\% \quad 44\% \bigcirc \frac{9}{20}$$

- Convert 0.38 and $\frac{1}{4}$ to percentages.

Use your conversions to write 45%, 0.38 and $\frac{1}{4}$ in ascending order.

- Order the numbers from greatest to smallest.

50%	$\frac{2}{5}$	0.45	$\frac{3}{10}$	54%	0.05
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- Explain why $\frac{13}{10}$ is greater than 87%.

- Write <, > or = to compare the amounts.

$$\frac{2}{3} \bigcirc 1.1 \quad 105\% \bigcirc \frac{19}{20} \quad 1.01 \bigcirc 100\%$$

- Write the values in ascending order.

$\frac{1}{2}$	0.48	2.7	65%	$\frac{21}{20}$	49%
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Compare methods with a partner.

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Reasoning and problem solving



I know that 100% is greater than $\frac{53}{0}$ because 100 is less than 53

No

Do you agree with Tiny?
Explain your answer.

Is the statement true or false?

There is no fraction, decimal or percentage that is greater than $\frac{99}{100}$, 0.99 or 99%, but smaller than 1 whole.

False

Explain your answer.

Write a fraction, decimal and percentage that could complete the comparison.

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

multiple possible answers, e.g.
 $\frac{7}{10}$, 70%, 0.7,
 $\frac{13}{20}$, 75%, 0.78

Mo wants to write the numbers in descending order.

87%	0.19	$\frac{17}{15}$
0%	2.19	$\frac{4}{8}$

I am going to convert them all to percentages.

Explain why Mo does not need to do this.
Write the numbers in descending order.

2.19, $\frac{17}{15}$, 87%,
 $\frac{4}{8}$, 0.19, 0%