Order and compare any decimals with up to 3 decimal places

Notes and guidance

In this small step, children compare decimal numbers that have a different number of decimal places.

A common misconception with this learning is thinking that numbers with more decimal places are greater, for example 0.365 > 0.41. Using place value counters on a place value chart to build numbers supports children in developing their understanding. They should recognise that 0.41 has more tenths than 0.365 – it does not matter that it has fewer decimal places.

Using place value charts supports children to recognise that they need to start comparing the numbers from the place value column that has the highest value, and that if this is the same, they need to look at the next column.

When progressing to ordering sets of numbers, encourage children to work systematically through the list, starting by comparing the place value column that has the greatest value, then working their way down.

Things to look out for

- Children may read 1.234 as "one point two hundred and thirty-four" and therefore assume it is greater than 1.3
- When ordering decimals, children may not write all of the numbers from the question in their answer.

Key questions

- What is the same and what is different about 1.4 and 1.305?
- What are the digits in each number worth?
- How can you represent these numbers on a place value chart?
- Which place value column in the chart has the greatest value? Which has the next greatest value?
- How can a place value chart help to show you which number is greater?
- How can you work systematically to order numbers in a list?

Possible sentence stems

- _____ is greater/smaller than _____ because ...
- The decimal _____ has a greater value than the decimal _____
- _____ tenths/hundredths/thousandths are greater than _____ tenths/hundredths/thousandths, so _____ is greater than _____

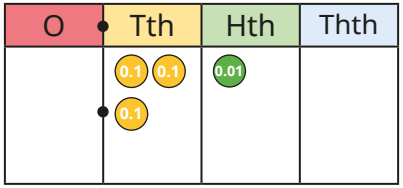
National Curriculum links

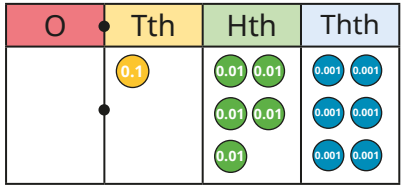
- Read, write, order and compare numbers with up to 3 decimal places
- Solve problems involving numbers up to 3 decimal places

Order and compare any decimals with up to 3 decimal places

Key learning

- Rosie has made the numbers 0.31 and 0.156 on place value charts.





Which number is greater? How do you know?

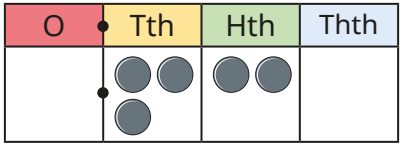
- Write > or < to compare the numbers.

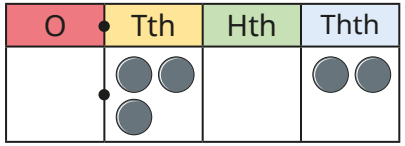
Use a place value chart and counters to help you.

0.65 ◯ 0.7 1.5 ◯ 0.988

0.406 ◯ 0.32 0.9 ◯ 0.769

- The place value charts show the numbers 0.32 and 0.302





What is the same and what is different about the numbers?

Which number is greater? How do you know?

- Max has written the numbers 2.113 and 2.13 in place value charts.

O	Tth	Hth	Thth
2	1	1	3

O	Tth	Hth	Thth
2	1	3	0

Which of the numbers is greater? How do you know?

Which place value column did you need to compare?

- Write > or < to compare the numbers.

2.4 ◯ 2.38 1.865 ◯ 1.87 3.079 ◯ 3.7

- Write the numbers in ascending order.

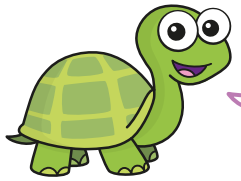
1.564	1.57	1.6	0.985	2.6

- Put these lengths in order, from longest to shortest.

1.45 m	0.98 m	1.6 m	2.1 m	1.405 m	1.61 m

Order and compare any decimals with up to 3 decimal places

Reasoning and problem solving



5.35 is greater than 5.4 because 35 is greater than 4

Do you agree with Tiny?

Explain why.

No

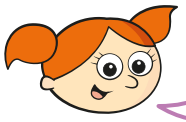
Amir is thinking of two numbers.

Use the clues to work out what his numbers could be.

- The greater number has 2 decimal places.
- The smaller number has 3 decimal places.
- You need to look at the hundredths column to compare them.

How many answers can you find?

multiple possible answers, e.g.
0.23 and 0.219



I have put some numbers in ascending order.

3.015

$3\frac{51}{1000}$

☐

3.105

$3\frac{51}{100}$

Alex has missed one number out.

What could the number be?

What could the number **not** be?

multiple possible answers, e.g.

3.052, 3.053, 3.054, 3.104

less than or equal to 3.051 or greater than or equal to 3.105