

Can I read, write, partition and order decimal numbers?

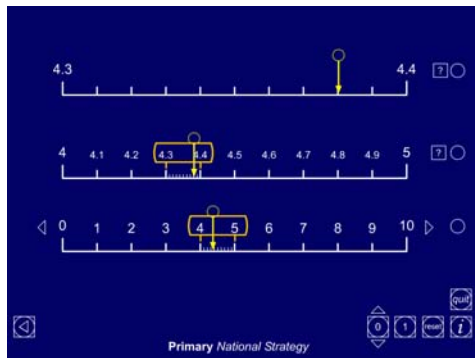
Teaching guidance

Key vocabulary

place value, decimal, decimal fraction, decimal point, decimal place, tenth, hundredth, thousandth, significant digit

Models and images

Use the *Decimal number line* ITP to zoom into a number line and position decimal numbers.



Decimal number line ITP

Use place-value charts to help identify the value of each digit in a decimal number.

1000	2000	3000	4000	5000	6000	7000	8000	9000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009

Show Total **40.076** Reset

Place-value chart spreadsheet

For decimal numbers with up to two places, use a 10 × 10 grid so that each square represents 0.01 and each row represents 0.1. Discuss the effect of repeatedly adding the same decimal number, for example 0.01.

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.2
0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.3
0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.4
0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.49	0.5
0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.6
0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68	0.69	0.7
0.71	0.72	0.73	0.74	0.75	0.76	0.77	0.78	0.79	0.8
0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.9
0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1

Teaching tips

- Build on understanding of decimals in the contexts of money and measures when working with decimal numbers with up to two places. However, decimal place value should also be planned for and taught in its own right and not just in those contexts.
- Stress that although £1.26 is read as 'one pound twenty-six', the decimal number 1.26 is normally read as 'one point two six'.
- Use number lines to help children read, write and order decimals.
- Present children with numbers that have different numbers of decimal places for ordering, to tackle the common misconception that the more digits there are after the decimal point, the bigger the number. When ordering numbers such as 2.3 and 2.15, children may find it helpful to use zero as a place holder so that each number has the same number of decimal places, i.e. 2.30 and 2.15.
- Focus on the vocabulary of decimal fractions and encourage children to read decimal numbers, using the language of tenths, hundredths and thousandths, so that, for example, they know the number comprising two tenths, five hundredths and nine thousandths is written as 0.259.
- Reinforce the equivalence between fractions and decimals. Fraction notation gives the language to help understand place value, for example, knowing 0.01 is equivalent to $\frac{1}{100}$ helps them to read this decimal number as one hundredth and not just as zero point zero one.