DECIMALS

KNOWLEDGE ORGANISER

Overview

tens → units

13.95 → hundredths (1/100)

→ tenths (1/10)

decimal point
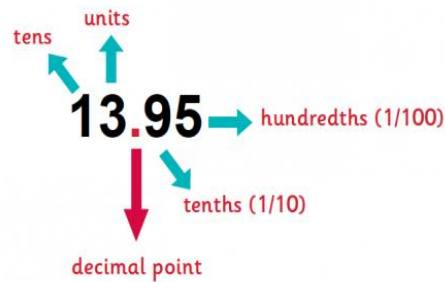
31.80 + 00.45 = 32.25

Decimals we learn:

- Recognise tenths & hundredths.
- Tenths/ hundredths as decimals
- Divide 1 or 2 digits by 10/ 100
- Tenths hundredths as decimals
- Tenths/ hundredths on a place value grid
- Tenths/ hundredths on a number line

Definition: Decimals are a way of showing numbers that are not whole (a bit like fractions). Decimals are 'in between' whole numbers, e.g. 8.3 is in between 8 and 9.

This learning is important because...

it helps us to understand the parts that can make up a whole amount. This is needed in lots of areas of life (e.g. sharing, cooking, making).

Decimals and Place Value

Place Value Chart

Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
3	8	2	6	4	5

Decimal point – separates the whole number from the fractional part.

Dividing by 10

Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
		2	8		

→

Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
			2	8	

÷10 ÷10

When dividing by 10, move digits one place to the right along the place value chart.

Dividing by 100

Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
		2	8		

Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
				2	8

÷100 ÷100

When dividing by 100, move digits two places to the right along the place value chart.

Rounding Decimals

0 | 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 | 1
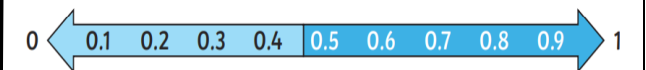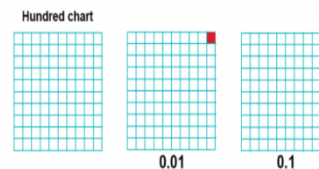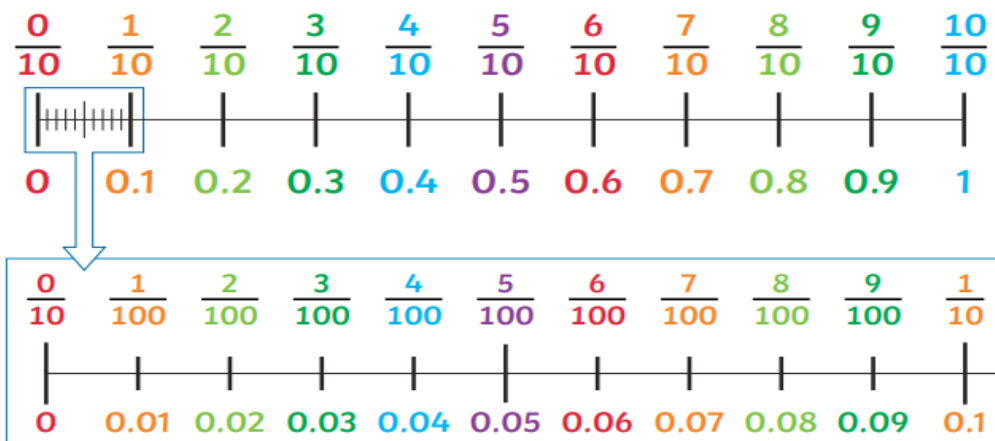
- If the tenths digit is 4 or below, we round down to the nearest whole number.
- If the tenths digit is 5 or above, we round up to the nearest whole number.

Tenth and Hundredth Equivalency

$\frac{0}{10}$ $\frac{1}{10}$ $\frac{2}{10}$ $\frac{3}{10}$ $\frac{4}{10}$ $\frac{5}{10}$ $\frac{6}{10}$ $\frac{7}{10}$ $\frac{8}{10}$ $\frac{9}{10}$ $\frac{10}{10}$

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

$\frac{0}{10}$ $\frac{1}{100}$ $\frac{2}{100}$ $\frac{3}{100}$ $\frac{4}{100}$ $\frac{5}{100}$ $\frac{6}{100}$ $\frac{7}{100}$ $\frac{8}{100}$ $\frac{9}{100}$ $\frac{1}{10}$

0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1

One hundredth = 1/100 = 0.01

Two hundredths = 2/100 = 0.02

Three hundredth = 3/100 = 0.03

Four hundredths = 4/100 = 0.04

Five hundredths = 5/100 = 0.05

Six hundredths = 6/100 = 0.06

Seven hundredths = 7/100 = 0.07

Eight hundredths = 8/100 = 0.08

Nine hundredths = 9/100 = 0.09

Ten hundredths = One tenth = 10/100 = 0.1

Hundred chart

0.01   0.1

One tenth = 1/10 = 0.1

Two tenths = 2/10 = 0.2

Three tenths = 3/10 = 0.3

Four tenths = 4/10 = 0.4

Five tenths = 5/10 = 0.5

Six tenths = 6/10 = 0.6

Seven tenths = 7/10 = 0.7

Eight tenths = 8/10 = 0.8

Nine tenths = 9/10 = 0.9

Ten tenths (1 whole) = 1

Partitioning One Whole/ Tenths and Hundredths

Partitioning One Whole

1 → 0.4, 0.6

1 → 0.3, 0.7

1 → 0.1, 0.9

1 → 0.2, 0.8
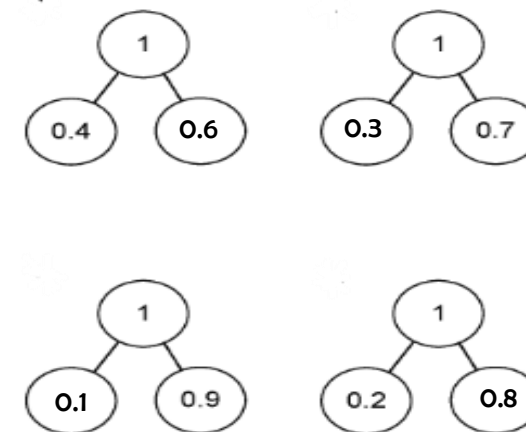
Partitioning into Tenths/ Hundredths

0.55 → 0.5, 0.05

0.73 → 0.7, 0.03
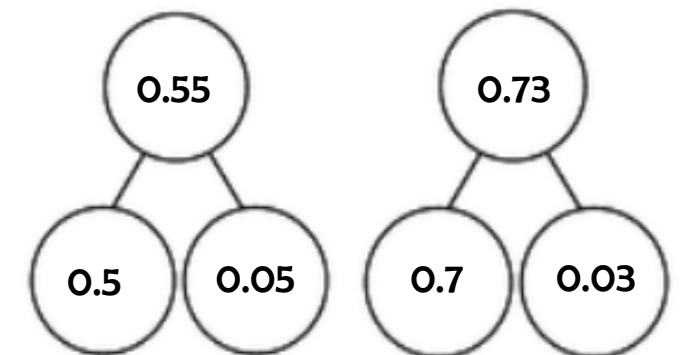
Key Vocabulary

Decimal	Fraction	Tenth	Hundredth	Part-Whole Model	Rounding	Decimal Point	Equivalent	Place Value