Calculating – adding decimal fractions

How do we add decimal fractions using a written strategy?

We arrange the numbers so the place values line up and then we start with the smallest value.

We first add the tenths. 6 tenths and 7 tenths is 13 tenths.

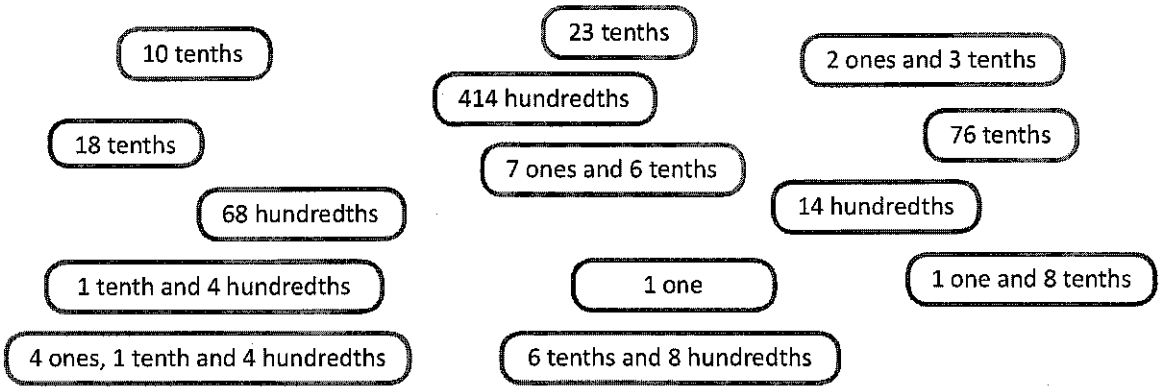
We rename this as 1 whole and 3 tenths.

We write the 3 in the tenths column and move the 1 to the wholes column.

Then we add the ones. 1 + 1 + 4 = 6

$$\begin{array}{r} {}^{1}1 \,.\, 6 \\ +\ 4 \,.\, 7 \\ \hline 6 \,.\, 3 \end{array}$$

1 **Knowing how to rename is a useful skill when adding decimal fractions. Practise your renaming skills here by colour coding the matching boxes:**



2 **Add these decimal fractions:**

a
$$\begin{array}{r} 2 \,.\, 6 \\ +\ 3 \,.\, 3 \\ \hline \\ \hline \end{array}$$

b
$$\begin{array}{r} 4 \,.\, 7 \\ +\ 5 \,.\, 4 \\ \hline \\ \hline \end{array}$$

c
$$\begin{array}{r} 5 \,.\, 4 \\ +\ 3 \,.\, 5 \\ \hline \\ \hline \end{array}$$

d
$$\begin{array}{r} 1 \,.\, 5 \\ +\ 1\ 2 \,.\, 3 \\ \hline \\ \hline \end{array}$$

e
$$\begin{array}{r} 1\ 8 \,.\, 6 \\ +\ 1\ 1 \,.\, 2 \\ \hline \\ \hline \end{array}$$

f
$$\begin{array}{r} 9 \,.\, 4 \\ +\ 3 \,.\, 7 \\ \hline \\ \hline \end{array}$$

3 **Now try these. Start with the hundredths and remember to rename if neccessary:**

a
$$\begin{array}{r} 3 \,.\, 4\ 6 \\ +\ 5 \,.\, 2\ 3 \\ \hline \\ \hline \end{array}$$

b
$$\begin{array}{r} 4 \,.\, 7\ 2 \\ +\ 3 \,.\, 1\ 9 \\ \hline \\ \hline \end{array}$$

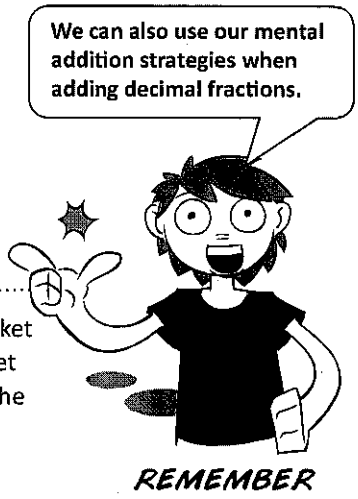
c
$$\begin{array}{r} 7 \,.\, 3\ 6 \\ +\ 5 \,.\, 6\ 5 \\ \hline \\ \hline \end{array}$$

Calculating – adding decimal fractions

4 **Use a mental or written strategy of your choice to solve these problems:**

a Add 6.06 and 5.42

b Add 12.24 and 67.12



c Jack scored 7.25 for his first dive and 8.35 for his second. What was his total score?

d Kate bought an adult movie ticket costing $9.50 and a child's ticket costing $4.95. How much did she spend in total?

5 **This is a sample of the menu at Laura's Lunches.**

a Brad orders a souvlaki, soup and an orange juice. How much will this cost him?

b Angelina orders a sushi roll, a bottle of water and a piece of fruit. What will this cost her?

c Choose your own lunch. Itemise your list and calculate the total value of your order.

Calculating – subtracting decimal fractions

How do we subtract decimal fractions using a written strategy?

We arrange the numbers so the place values line up and then we start with the smallest value.

We first subtract the tenths. We have 2 tenths, can we subtract 5 tenths from this?

No, so we rename a one as 10 tenths. Now we have 12 tenths. 12 tenths subtract 5 tenths is 7 tenths.

We have 5 ones, can we subtract 4 ones? Yes, the answer is 1 whole.

$$\begin{array}{r} {}^{5}\cancel{6}\,.\,{}^{1}2 \\ -\ 4\,.\,5 \\ \hline 1\,.\,7 \end{array}$$

1 **Solve these subtraction problems:**

a
$$\begin{array}{r} 8\,.\,3 \\ -\ 2\,.\,2 \\ \hline \\ \hline \end{array}$$

b
$$\begin{array}{r} 4\,.\,7 \\ -\ 3\,.\,4 \\ \hline \\ \hline \end{array}$$

c
$$\begin{array}{r} 5\,.\,4 \\ -\ 3\,.\,5 \\ \hline \\ \hline \end{array}$$

d
$$\begin{array}{r} 1\,2\,.\,3 \\ -\ \ 5\,.\,2 \\ \hline \\ \hline \end{array}$$

e
$$\begin{array}{r} 1\,8\,.\,6 \\ -\ 1\,1\,.\,2 \\ \hline \\ \hline \end{array}$$

f
$$\begin{array}{r} 9\,.\,4 \\ -\ 3\,.\,7 \\ \hline \\ \hline \end{array}$$

2 **Now try these. Start with the hundredths and remember to rename if neccessary:**

a
$$\begin{array}{r} 8\,.\,4\,4 \\ -\ 3\,.\,2\,4 \\ \hline \\ \hline \end{array}$$

b
$$\begin{array}{r} 4\,.\,7\,2 \\ -\ 2\,.\,2\,9 \\ \hline \\ \hline \end{array}$$

c
$$\begin{array}{r} 8\,.\,4\,6 \\ -\ 1\,.\,6\,3 \\ \hline \\ \hline \end{array}$$

Sometimes we have to work with numbers that have a different amount of digits such as **8.4 – 5.35**
When this happens, we rename. 4 tenths becomes 40 hundredths: **8.40 – 5.35**

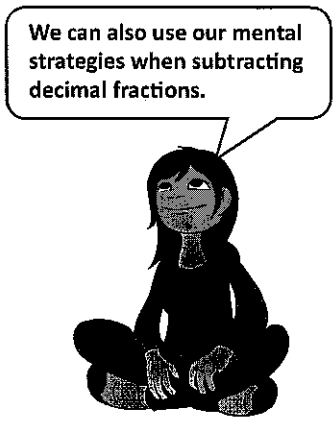
3 **Rename these problems and solve:**

a
$$\begin{array}{r} 9\,.\,5 \\ -\ 2\,.\,2\,4 \\ \hline \\ \hline \end{array}$$

b
$$\begin{array}{r} 6\,.\,1\,7 \\ -\ 2\,.\,3 \\ \hline \\ \hline \end{array}$$

c
$$\begin{array}{r} 9\,.\,3 \\ -\ 4\,.\,7\,2 \\ \hline \\ \hline \end{array}$$

Calculating – subtracting decimal fractions



4 **Use a mental or written strategy of your choice to solve these problems:**

a 27.47 – 16.27

b 13.75 – 9.25

c In 1936 Jesse Owens broke the long jump record with a leap of 2.06 m. His record stood for 25 years until fellow American, Ralph Boston leapt 2.21 m. What did he beat Jesse's record by?

d The 100 m sprint record was broken in 2009 with a time of 9.69 sec. Another athlete neared that record a month later, with a time of 9.7 sec. What is the difference between their times?

5 **Belle's basketball team measured their heights and entered them on the chart. What is the difference in heights between:**

Belle's Team

Suzy	1.43 m
Ti	1.37 m
Grace	1.47 m
Marietta	1.42 m
Madison	1.54 m
Lucy	1.58 m
Belle	1.61 m
Natasha	1.53 m
Donna	1.34 m
Nina	1.53 m

a Suzy and Lucy?

b Ti and Natasha?

c Nina and Belle?

d The tallest and shortest girl?