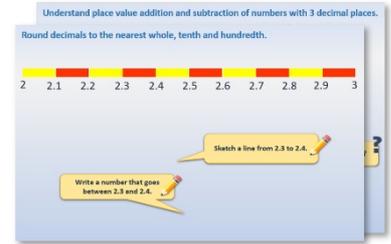


Year 5: Week 1, Day 4

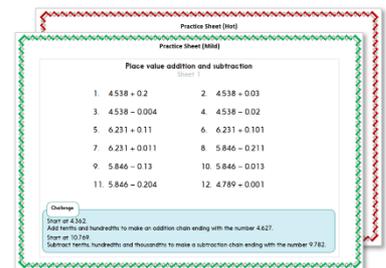
Column addition of decimals

Each day covers one maths topic. It should take you about 1 hour or just a little more.

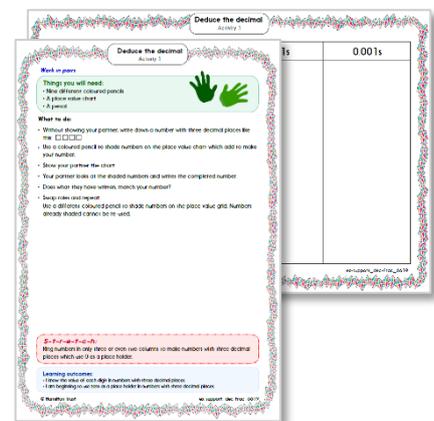
- Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



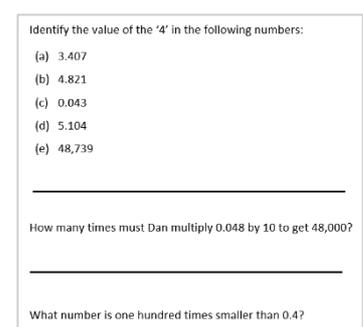
- Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



- Finding it tricky? That's OK... have a go with a grown-up at **A Bit Stuck?**



- Have I mastered the topic? A few questions to **Check your understanding**. Fold the page to hide the answers!



Learning Reminders

Use written addition to add decimals.

Calculate $4.56 + 2.37$

Let's find the exact total using column addition; 'expanded' method first...

Add the 0.01s, then the 0.1s, then the 1s.

$$\begin{array}{r}
 4 \quad 0.5 \quad 0.06 \\
 + \quad 2 \quad 0.3 \quad 0.07 \\
 \hline
 0.1 \\
 \hline
 6 \quad 0.9 \quad 0.03 \\
 \hline
 \underline{6.93}
 \end{array}$$

$$0.06 + 0.07 = 0.13$$

Remember to leave a blank row above the answer line.

...now the 'compact' method.

Add the 0.01s, then the 0.1s, then the 1s.

$$\begin{array}{r}
 4.56 \\
 + 2.37 \\
 \hline
 1 \\
 \hline
 6.93
 \end{array}$$

Use written addition to add decimals.

Find $35.6 + 78.5$

Add the 0.1s, then the 1s, then the 10s.

$$\begin{array}{r}
 30 \quad 5 \quad 0.6 \\
 + \quad 70 \quad 8 \quad 0.5 \\
 \hline
 10 \quad 1 \\
 \hline
 110 \quad 4 \quad 0.1 \\
 \hline
 \underline{114.1}
 \end{array}$$

or

$$\begin{array}{r}
 35.6 \\
 + 78.5 \\
 \hline
 11 \\
 \hline
 114.1
 \end{array}$$

Learning Reminders

Use written addition to add decimals.

$$45.7 + 3.45$$

Are you happy
with this
layout?

$$\begin{array}{r} 45.7 \\ + 3.45 \\ \hline \end{array}$$

$$\begin{array}{r} 45.7 \\ + 3.45 \\ \hline 49.15 \end{array}$$

No! The columns need to be aligned correctly.
We need to align tenths with tenths, etc. The easy way to do this is to align the decimal point in each number.

Learning Reminders

Column addition of decimal numbers.

Table of shot put results

Athlete	1st throw	2nd throw
Ceri	21.67m	24.79m
James	22.12m	24.65m
Gurpit	22.45m	21.89m
Natasha	23.57m	22.68m
Alice	22.56m	23.13m

Find
Ceri's total

$$\begin{array}{r} 21.67\text{ m} \\ + 24.79\text{ m} \\ \hline \end{array}$$

Practice Sheet Mild

Adding decimals

Add each pair of numbers to find an exact total.

1. $34.5 + 27.3$

6. $5.42 + 6.37$

2. $62.7 + 23.5$

7. $4.48 + 3.27$

3. $24.8 + 43.9$

8. $5.63 + 2.84$

4. $46.7 + 25.5$

9. $6.57 + 2.48$

5. $47.8 + 34.4$

10. $7.85 + 4.56$

How accurate were your estimates?

Practice Sheet Mild

Shot put results

Who do you think won the shot put event?
Find the total of the two throws for each athlete.
Then rank the athletes.

Athlete	1st throw	2nd throw
Ceri	21.67m	24.79m
James	22.12m	24.65m
Gurpit	22.45m	21.89m
Natasha	23.57m	22.68m
Alice	22.56m	23.13m

Practice Sheet Hot

Adding decimals

Add each pair of numbers to find an exact total.

1. $67.8 + 35.9$

2. $45.8 + 26.7$

3. $5.42 + 6.37$

4. $4.48 + 3.27$

5. $5.63 + 2.84$

6. $6.57 + 2.48$

7. $7.85 + 4.56$

8. $37.2 + 4.28$

9. $24.6 + 3.84$

10. $47.4 + 8.7$

11. $3.78 + 21.8$

12. $45.5 + 2.52$

How accurate were your estimates?

Challenge

Janie says that adding 36.2 to 9.77 gives an answer of 133.9.
What advice would you give her?

Practice Sheet Hot

Long jump results

Who do you think won the long jump event?
Find the total of the three jumps for each athlete.
Then rank the athletes.

Athlete	1st jump	2nd jump	3rd jump
Sunita	3.45m	3.28m	3.64m
Dylan	2.87m	3.14m	2.96m
Faith	2.92m	3.04m	2.97m
Lee	3.07m	3.26m	3.18m
Toby	3.46m	3.19m	3.24m
Abbie	3.27m	3.54m	3.27m

Challenge

Zane has just beaten the winner by a total of 16cm!
He never jumped less than 3.00m - what could be the distances for his three jumps?

Practice Sheets Answers

Adding decimals (mild)

- $34.5 + 27.3 = 61.8$
- $62.7 + 23.5 = 86.2$
- $24.8 + 43.9 = 68.7$
- $46.7 + 25.5 = 72.2$
- $47.8 + 34.4 = 82.2$
- $5.42 + 6.37 = 11.79$
- $4.48 + 3.27 = 7.75$
- $5.63 + 2.84 = 8.47$
- $6.57 + 2.48 = 9.05$
- $7.85 + 4.56 = 12.41$

Shot put results (mild)

Athlete	1st throw	2nd throw	Total	Rank
Ceri	21.67m	24.79m	46.46m	2
James	22.12m	24.65m	46.77m	1
Gurpit	22.45m	21.89m	44.34m	5
Natasha	23.57m	22.68m	46.25m	3
Alice	22.56m	23.13m	45.69m	4

Adding decimals (hot)

- $67.8 + 35.9 = 103.7$
- $45.8 + 26.7 = 72.5$
- $5.42 + 6.37 = 11.79$
- $4.48 + 3.27 = 7.75$
- $5.63 + 2.84 = 8.47$
- $6.57 + 2.48 = 9.05$
- $7.85 + 4.56 = 12.41$
- $37.2 + 4.28 = 41.48$
- $24.6 + 3.84 = 28.44$
- $47.4 + 8.7 = 56.1$
- $3.78 + 21.8 = 25.58$
- $45.5 + 2.52 = 48.02$

Challenge

Janie says that adding 36.2 to 9.77 gives an answer of 133.9. What advice would you give her? **Janie has taken out the decimal point, added the numbers to give completely the wrong answer. She should have used column addition taking care to line up the columns and the decimal point.**

Long jump results (hot)

Athlete	1st jump	2nd jump	3rd jump	Total	Rank
Sunita	3.45m	3.28m	3.64m	10.37m	1
Dylan	2.87m	3.14m	2.96m	8.97m	5
Faith	2.92m	3.04m	2.97m	8.93m	6
Lee	3.07m	3.26m	3.18m	9.51m	4
Toby	3.46m	3.19m	3.24m	9.89m	3
Abbie	3.27m	3.54m	3.27m	10.08m	2

Challenge

Zane's total for his 3 jumps is 10.53m.

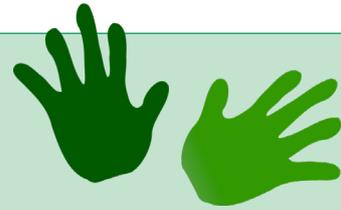
Answers where all 3 jumps are more than 3.00m and add up to 10.53m, e.g. 3.47m + 3.38m + 3.68m are acceptable.

A Bit Stuck? Dancing decimals

Work in pairs

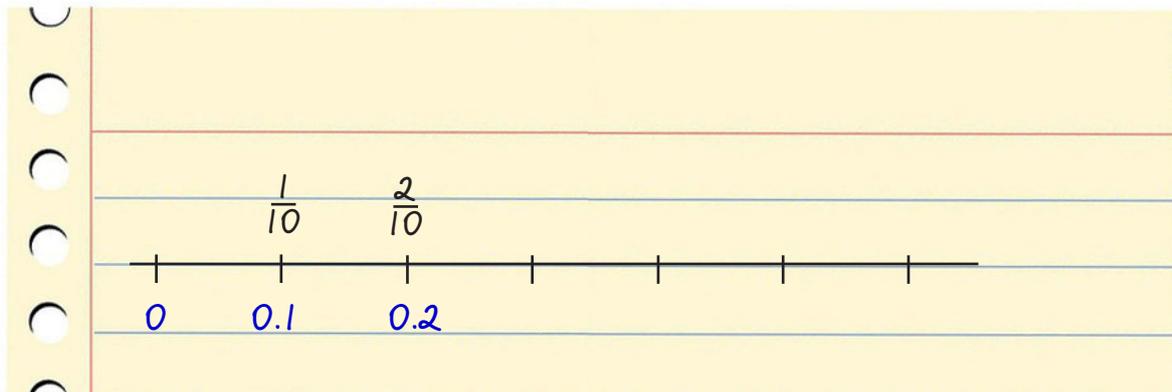
Things you will need:

- a pencil
- an enlarged 0 to 3 number line
- a whiteboard and pen



What to do:

- Look at the long number line, stretching from zero to three. Label each division on the scale, writing decimals below the line and fractions above the line.



S-t-r-e-t-c-h:

Can you think of another way we could write $\frac{5}{10}$?

What about $\frac{15}{10}$? $\frac{11}{2}$? $\frac{25}{10}$? $\frac{21}{2}$?

Where does $\frac{1}{4}$ appear on the line?

What about $\frac{3}{4}$?

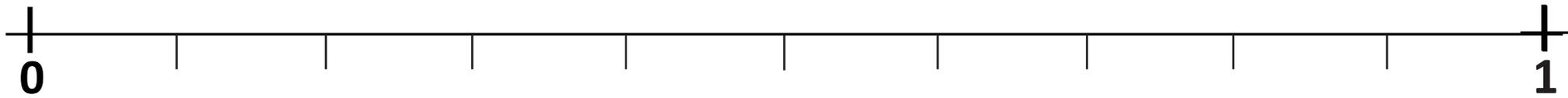
Do you know the decimal equivalents for these fractions?

Learning outcomes:

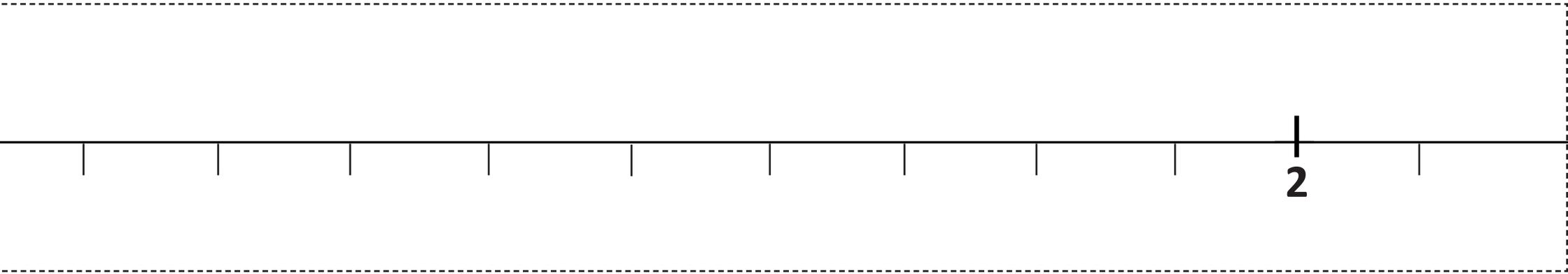
- I can place any number of tenths on a 0 to 3 landmarked number line.
- I can count on and back in tenths between 0 and 3.
- I am beginning to recognise and recall fractions and decimals equivalent to tenths.

A Bit Stuck?
Dancing decimals

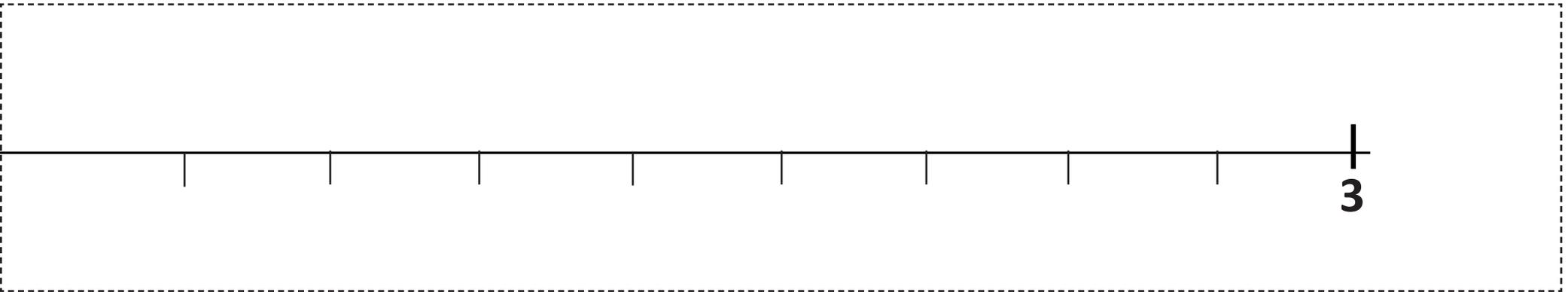
Cut out this number line, then glue it together carefully.



A Bit Stuck?
Dancing decimals



A Bit Stuck?
Dancing decimals



Check your understanding

Questions

Sometimes/ Always/ Never... 'If you add two 2-place decimal numbers, the answer also has 2 decimal places.'

Jamie added 6.77 to a number and his answer was 20. What number did he start with?

Ali's homework might need correcting... Correct any he has wrong and say what he did wrong.

$\begin{array}{r} 2.75 \\ + 5.95 \\ \hline 7.60 \end{array}$	$\begin{array}{r} 3.42 \\ + 5.57 \\ \hline 8.99 \end{array}$
$\begin{array}{r} 4.83 \\ + 1.93 \\ \hline 5.76 \end{array}$	$\begin{array}{r} 2.47 \\ + 68.5 \\ \hline 93.2 \end{array}$

Fold here to hide answers:

Check your understanding

Answers

Sometimes/ Always/ Never... 'If you add two 2-place decimal numbers, the answer also has 2 decimal places.'

Sometimes, e.g. $1.43 + 3.51 = 4.94$ but not if the last 2 digits add to 10, e.g. $3.44 + 2.36 = 5.8$

Jamie added 6.77 to a number and his answer was 20. What number did he start with?

13.23 – probably best solved by counting up from 6.77

Ali's homework might need correcting... Correct any he has wrong and say what he did wrong.

$2.75 + 5.95$ should be 8.70 and $4.83 + 1.93$ should be 6.76. In each case, he has not noted the extra 1s digits when the column totals more than 10. These are best set out with a space above the answer line for extra digits.

3.4.2 has a 'mysterious' extra decimal point. The total for $3.42 + 5.57$ is correct.

$2.47 + 68.5$ should be 70.97, he has misaligned the digits.