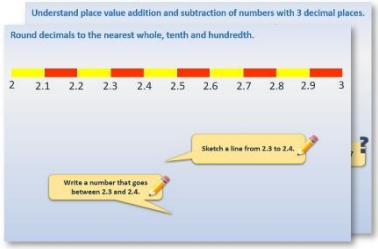
Year 4: Week 2, Day 1

Adding three or four numbers

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

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



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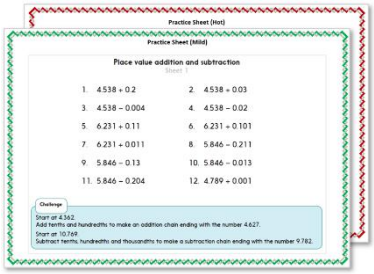

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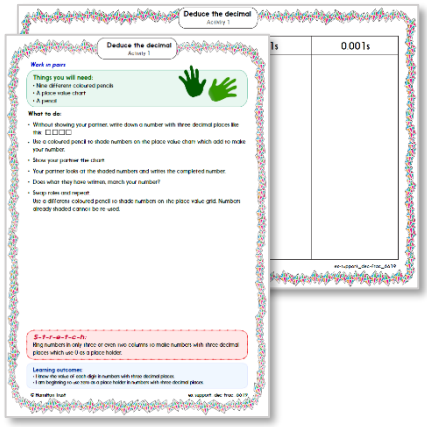

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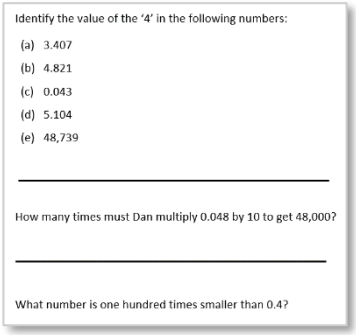


Learning Reminders

Add three 2-digit numbers using column addition.

We can add three 2-digit numbers using **expanded addition.**

Let's try 56 + 37 + 28.

First **partition** the numbers and set out neatly. Leave a space under the last number...

Add the 1s. **6 + 7 + 8 = ?**

Put the 20 on the **waiting line under the 10s** and 1 in the **answer line under the 1s.**

Add the 10s. **50 + 30 + 20 + 20 = ?**

Finally recombine, **120 + 1 =**

	50	6
	30	7
+	20	8
	20	
	120	1

120 + 1 = 121

Add three 2-digit numbers using column addition.

Let's compare that with the **compact method...**

	50	6
	30	7
+	20	8
	20	
	120	1

120 + 1 = 121

	5	6
	3	7
+	2	8
	2	
	1	2 1

Learning Reminders

Add four 2-digit numbers using compact addition.

Now we're going to add four 2-digit numbers using the **compact method.**

Let's try **72 + 46 + 25 + 53.** Will the answer be more than 100? More than 200?

Add the 1s. **2 + 6 + 5 + 3 = ?**

Where do we write the 1 and the 6 in 16?

Add the 10s. **70 + 40 + 20 + 50 + 10 = ?**

```
   72
   46
   25
 + 53
   1
 ----
  196
```

Practice Sheet Mild

Adding three numbers

Part 1

Use expanded addition to solve these additions:

12 + 13 + 22	20 + 16 + 24
32 + 14 + 27	27 + 21 + 34
36 + 33 + 24	55 + 44 + 32

Part 2

Use compact addition to solve these additions:

21 + 42 + 34	32 + 47 + 46
34 + 25 + 42	46 + 51 + 28
51 + 62 + 45	67 + 72 + 39
48 + 46 + 53	74 + 63 + 86

Part 3

Choose three cards. Add the numbers.
Do this six times. You must do a different addition each time!

47 66 58 45 74

Challenge

I added three consecutive numbers with a total of 222. What were the numbers?

Practice Sheet Hot

Adding four numbers

Part 1

Use expanded or compact addition to solve these additions:

11 + 23 + 12 + 31 35 + 21 + 14 + 32
24 + 15 + 23 + 11 41 + 10 + 22 + 53
32 + 61 + 45 + 56 58 + 72 + 63 + 64

Part 2

Use compact addition to solve these additions:

62 + 75 + 84 + 53 76 + 71 + 27 + 82
83 + 81 + 94 + 37 95 + 12 + 60 + 76
84 + 72 + 85 + 96 98 + 89 + 78 + 97

Part 3

A palindrome reads the same backwards as forwards, e.g. the words: mum, level or madam. Palindromic numbers do the same, e.g. 4114 or 55 or 727.

Add four 2-digit numbers to give each of these palindromic answers:

202 191 333 252

Challenge

What is the largest possible palindromic total you can find by adding four 2-digit numbers?

Practice Sheet Answers

Adding three numbers (mild)

Part 1

Use expanded addition to solve these additions:

12 + 13 + 22 = 47
32 + 14 + 27 = 73
36 + 33 + 24 = 93
20 + 16 + 24 = 60
27 + 21 + 34 = 82
55 + 44 + 32 = 131

Part 2

Use compact addition to solve these additions:

21 + 42 + 34 = 97
34 + 25 + 42 = 101
51 + 62 + 45 = 158
48 + 46 + 53 = 147
32 + 47 + 46 = 125
46 + 51 + 28 = 125
67 + 72 + 39 = 178
74 + 63 + 86 = 223

Part 3

Choose three cards. Add the numbers.
Do this six times. You must do different addition each time!

47 + 66 + 58 = 171
47 + 66 + 45 = 158
47 + 66 + 74 = 187
47 + 58 + 45 = 150
47 + 58 + 74 = 179
47 + 45 + 74 = 166
66 + 58 + 45 = 169
66 + 58 + 74 = 198
66 + 45 + 74 = 185
58 + 45 + 74 = 177

Challenge

The numbers were:
73 + 74 + 75 = 222

Adding four numbers (hot)

Part 1

Use expanded or compact addition to solve these additions:

11 + 23 + 12 + 31 = 77
24 + 15 + 23 + 11 = 73
32 + 61 + 45 + 56 = 194
35 + 21 + 14 + 32 = 102
41 + 10 + 22 + 53 = 126
58 + 72 + 63 + 64 = 257

Part 2

Use compact addition to solve these additions:

62 + 75 + 84 + 53 = 274
83 + 81 + 94 + 37 = 295
84 + 72 + 85 + 96 = 337
76 + 71 + 27 + 82 = 256
95 + 12 + 60 + 76 = 243
98 + 89 + 78 + 97 = 362

Part 3

Examples include:
202 = 48 + 17 + 83 + 54
191 = 23 + 38 + 69 + 61
333 = 81 + 82 + 83 + 87
252 = 49 + 74 + 83 + 46

Challenge

393 is the largest possible answer, e.g. 99 + 99 + 98 + 97

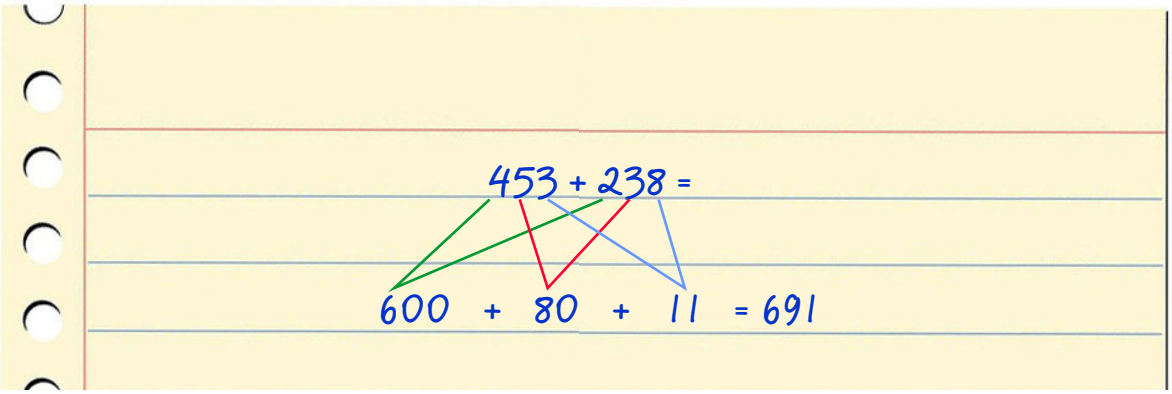
A Bit Stuck?
Do the splits

Work in pairs

Things you will need:
- A set of 100s, 10s and 1s place value cards
- A pencil

What to do:

- Shuffle the 100 to 500 cards and place face down in a pile.
  Shuffle the 10 to 50 cards and place face down.
  Shuffle the 1 to 9 cards and place face down.
- Take the top two cards from each pile and put them together to make a pair of 3-digit numbers.
- Collect the 100s, 10s and 1s. Find the combined total. Record the addition.
- Repeat at least two more times.
- Repeat, but this time use the 100 to 500 cards, 10 to 90 cards and 1 to 5 cards.



S-t-r-e-t-c-h:
Try using the 100 to 500 cards, 10 to 90 cards and 1 to 9 cards.

Learning outcomes:
- I can use partitioning to add pairs of 3-digit numbers (answers < 1000, 10s < 100, 1s < 10).
- I am beginning to use partitioning to add pairs of 3-digit numbers (answers < 1000, 10s > 100 or 1s > 10).

Place Value Cards (sheet 1)

1 0 0	6 0 0
2 0 0	7 0 0
3 0 0	8 0 0
4 0 0	9 0 0
5 0 0	

Place Value Cards (sheet 2)

10	60	1
20	70	2
30	80	3
40	90	4
50		5

Place Value Cards (sheet 3)

6

7

8

9

Check your understanding

Questions

True or false?

- Adding three 2-digit numbers always produces a number over 50.
- Adding three 2-digit numbers cannot produce 299.
- There are three identical numbers which add to 252.

Choose three consecutive numbers, e.g. 39, 40 and 41.
Add them.
Repeat twice with different sets of consecutive numbers.
Can you see any relationship between the total in each case and the numbers added?
Simplify the numbers if it's hard to spot a pattern.
Use a calculator to play with the numbers if necessary…

Does this work with all sets of three consecutive numbers, regardless of their size? Can you explain why?

Fold here to hide your answers

Check your understanding

Answers

True or false?

- Adding three 2-digit numbers always produces a number over 50. False – e.g. 12, 14 and 23 which total 49. Children should be able to give their own similar counter-examples.
- Adding three 2-digit numbers cannot produce 299. True, since the largest 2-digit number is 99 and 99 + 99 + 99 = 297.
- There are three identical numbers which add to 252. True – since the digit sum of 252 is 9, it must be divisible by 3. Children may solve this by trial and improvement and find 84 + 84 + 84 = 252.

Choose three consecutive numbers, e.g. 39, 40 and 41.
Add them. 120.
Repeat twice with different sets of consecutive numbers.
Can you see any relationship between the total in each case and the numbers added?
Simplify the numbers if it's hard to spot a pattern.
Use a calculator to play with the numbers if necessary…

Does this work with all sets of three consecutive numbers, regardless of their size? Can you explain why?
The total is always 3 times the middle number of the three; this is because one of the numbers is *one less* and one is *one more* than the middle one.

Year 4: Week 2, Day 2

Adding money

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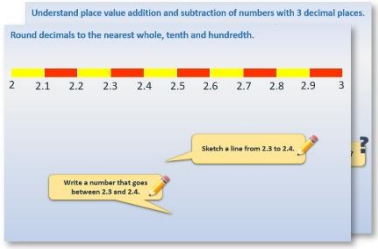

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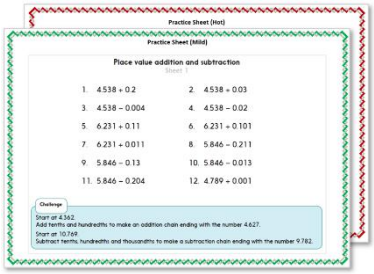

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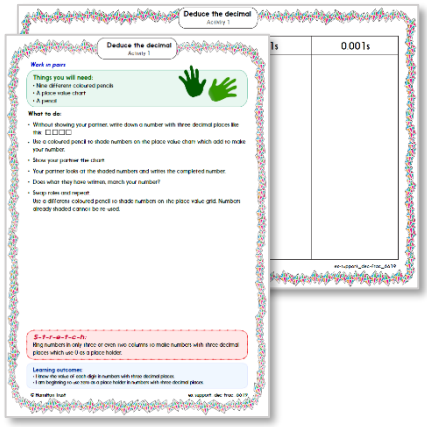

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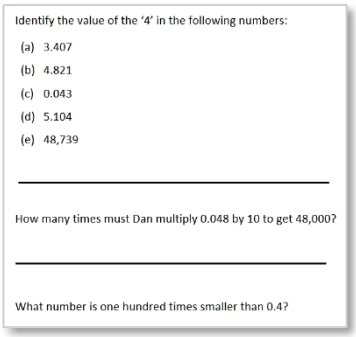


Learning Reminders

Add amounts of money using expanded addition.

We can use **expanded addition** to add £3.24 and £2.58.

Partition the amounts into £s, 10ps and 1ps. Line the columns up neatly and don't forget a **blank 'waiting line'** under the second number.

	£3	20p	4p
+	£2	50p	8p
		10p	
	£5	80p	2p

£5 + 80p + 2p = £5.82

Add the 1ps. 4p + 8p = 12p. We put 10p under the 10ps in the **waiting line** and 2p under the 1ps in the **answer line.**

Next add the 10ps. 20p + 50p + 10p = ?

Then the £s. £3 + £2 = ?

Finally **recombine** the pounds and pence.

Learning Reminders

Add amounts of money using expanded and compact addition.

Try adding 324 and 258 using **compact addition.**

Let's check through that...

1s

10s

100s

```
  324
+ 258
    1
  ---
  582
```

We can add £3.24 and £2.58 in the same way, without partitioning the amounts...!

```
  £3.24
+ £2.58
     1
  -----
  £5.82
```

Learning Reminders

Add amounts of money using compact addition.

Work out 374 + 283 using compact addition.

We can add £3.74 and £2.83 in the same way.

Let's check through...

What happened when we added 70 and 80?

```
  374
+ 283
    1
  ---
  657
```

```
  £3.74
+ £2.83
    1
  -----
  £6.57
```

The 70p and 80p make £1.50. 5 goes under the 10ps and the £1 under the pounds.

Practice Sheet Mild

Missing number additions

Fill in the missing numbers:

1.
£1.00 20p ☐
+ £2.00 30p ☐
£3.00 ☐ 8p

2.
£3.00 ☐ 5p
+ £2.00 ☐ 1p
£5.00 20p ☐

3.
£1.00 20p ☐
+ £3.00 20p ☐
£4.00 ☐ 7p

4.
£3.00 20p ☐
+ £1.00 50p ☐
10p
£4.00 ☐ 1p

5.
£3.☐2
+ £2.☐6
1
£6. 2☐

6.
£4. 3 ☐
+ £2. 2 ☐
1
£6.☐☐

7.
£3.☐5
+ £2.☐1
1
£6. 3☐

8.
£4. 1 ☐
+ £3. 2 ☐
1
£7.☐ 4

9.
£4.☐1
+ £1.☐4
1
£6. 1☐

Challenge

Choose three amounts and add them. Repeat this twice.
What is the largest total possible? And the smallest? How close can you get to £90?

£14.76 £27.76 £56.92
£25.38 £30.55

Practice Sheet (hot)
Adding money

Part 1
Use expanded or compact addition to answer these additions:

452 + 583 £4.52 + £5.83
465 + 387 £4.65 + £3.87
368 + 457 £3.68 + £4.57

Part 2
Use expanded addition and then compact addition to answer these additions:

£6.54 + £3.65
£2.81 + £6.65
£5.48 + £4.78

Part 3
Use compact addition to answer these additions:

£4.75 + £1.82 + £2.37
£7.42 + £7.56 + £8.54
£8.57 + £6.79 + £1.65

Challenge

Write 2 amounts that add to exactly £12.34.
BUT the 1ps must add to more than 10p and the 10ps must add to more than £1.

Further challenge
Write three amounts that add to exactly £12.34 – same rules as above!

Practice Sheet Answers

Missing number additions (mild)

(for some other correct answers are possible, these are examples)

1.
£1.00 20p 4p
+ £2.00 30p 4p
£3.00 50p 8p

2.
£3.00 10p 5p
+ £2.00 10p 1p
£5.00 20p 6p

3.
£1.00 20p 4p
+ £3.00 20p 3p
£4.00 40p 7p

4.
£3.00 20p 9p
+ £1.00 50p 2p
10p
£4.00 80p 1p

5.
£3.82
+ £2.46
1
£6.28

6.
£4.37
+ £2.28
1
£6.65

7.
£3.95
+ £2.41
1
£6.36

8.
£4.18
+ £3.26
1
£7.44

9.
£4.21
+ £1.94
1
£6.15

Challenge

£56.92 + £30.55 + £27.76 = £115.23 (largest)
£14.76 + £25.38 + £27.76 = £67.90 (smallest)
Closest total to £90 is £83.69 (£27.76 + £25.38 + £30.55)

Adding money (hot)

Part 1

452 + 583 = 1035
465 + 387 = 852
368 + 457 = 825

£4.52 + £5.83 = £10.35
£4.65 + £3.87 = £8.52
£3.68 + £4.57 = £8.25

Part 2

£6.54 + £3.65 = £10.19
£2.81 + £6.65 = £9.46
£5.48 + £4.78 = £10.26

Part 3

£4.75 + £1.82 + £2.37 = £8.94
£7.42 + £7.56 + £8.54 = £23.52
£8.57 + £6.79 + £1.65 = £17.01

Challenge

£1.66 + £10.68 = £12.34
£1.99 + £10.35 = £12.34
£1.69 + £10.65 = £12.34

£1.77 + £10.57 = £12.34
£1.67 + £10.67 = £12.34
£1.78 + £10.56 = £12.34

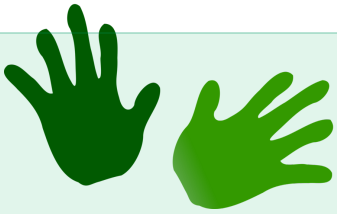
£1.88 + £10.46 = £12.34
£1.68 + £10.66 = £12.34
£1.79 + £10.55 = £12.34

These are examples, other correct answers are possible. Check addition adds up to £12.34.

A Bit Stuck?
Pocket money

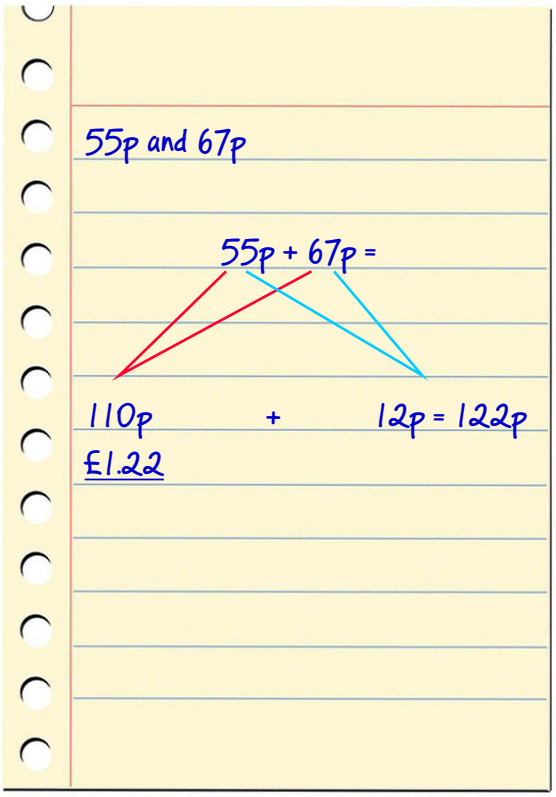
Work in pairs

Things you will need:
- 10p and 1p coins
- A pencil



What to do:

- Take it in turns to choose two items from the website page.
- Find the total. You can use 10p and 1p coins, or draw a jotting to help you.
- Write the total cost in pounds.
- Score 10 points if the total is more than £1.50.

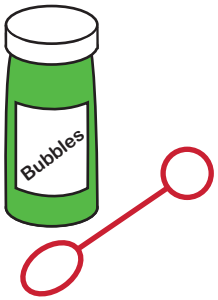


S-t-r-e-t-c-h:
Choose three items and find the total cost.

Learning outcomes:
- I can add pairs of 2-digit prices, using partitioning (answer greater than £1).
- I can write amounts between 100p and 200p in pounds.
- I am beginning to add three 2-digit prices.

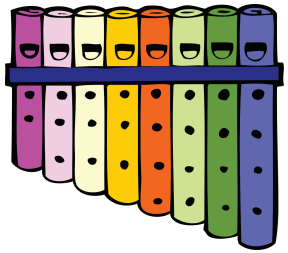
Pocket Money

Have fun spending your pocket money here - find a great range of toys and accessories at affordable prices.

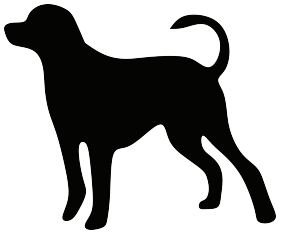


Multi-coloured bubbles
55p
Add to basket

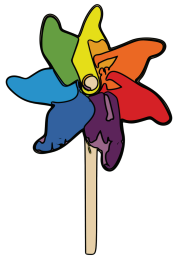
Fast spin yo-yo
67p
Add to basket



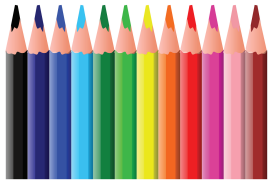
Mini pan pipes
72p
Add to basket



Stretchy dog
85p
Add to basket



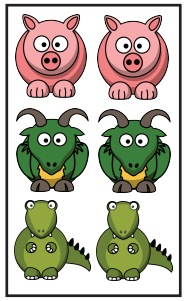
Windmill
58p
Add to basket



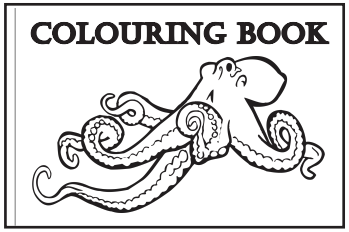
Mini pencil pack
63p
Add to basket

Sheriff's badge
76p
Add to basket

Tiger note pad
92p
Add to basket



Stickers
88p
Add to basket



Colouring book
96p
Add to basket

Check your understanding

Questions

Complete these additions using expanded column addition.

I. £5.78 + £4.22

II. £2.56 + £7.44

III. £3.17 + £6.83

Did you notice a pattern?

Can you write two more additions like this?

Is a column addition calculation the most efficient way to find:

£4.99 + £7.46 £8.06 + £8.06 £4.31 + £5.69?

Write the missing numbers in this calculation:

	£	10p	1p
	4	☐	7
+	5	6	☐
	☐	4	5

If £3.47 is subtracted from a number to leave £3.85, what was the number?

Check your understanding

Answers

Complete these additions using expanded column addition.

(i) £5.78 + £4.22 = £10.

(ii) £2.56 + £7.44 = £10

(iii) £3.17 + £6.83 = £10

Did you notice a pattern? All three additions total £10.

Can you write two more additions like this? Check children's examples. Can they articulate that the 1ps column always adds to 10p, the 10ps add to 90p and the £1s add to £9 (before moving amounts across columns)?

Is a column addition calculation the most efficient way to find:

£4.99 + £7.46 = £12.45. Add £5 to £7.46 and subtract 1p.

£8.06 + £8.06 = £16.12. Double each of the £s and ps.

£4.31 + £5.69 = £10. 31 and 69 are complements to 100, add that (as £1) to £4 and £5.

Write the missing numbers in this calculation:

	£	10p	1p
	4	7	7
+	5	6	8
	1	1	
	10	4	5

Note the 1s in the waiting line

If £3.47 is subtracted from a number to leave £3.85, what was the number? £7.32. Watch for children who have subtracted £3.47 from £3.85 (38p) – a bar model can help clarify that the answer is found by adding the 2 amounts:

?	
£3.47	£3.85

Year 4: Week 2, Day 3

Finding change

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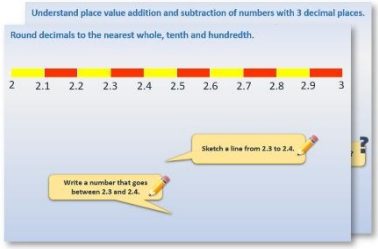

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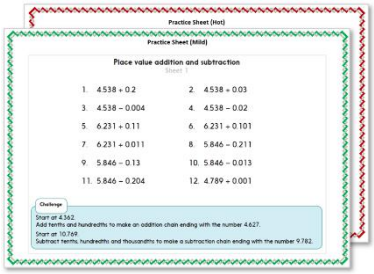

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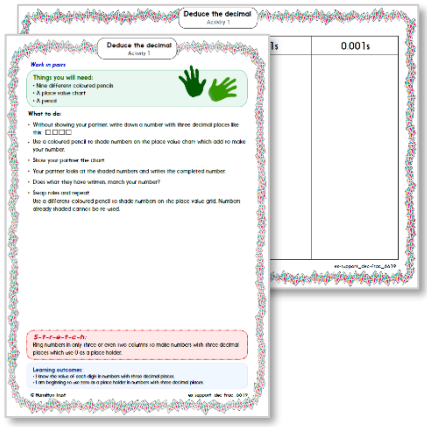

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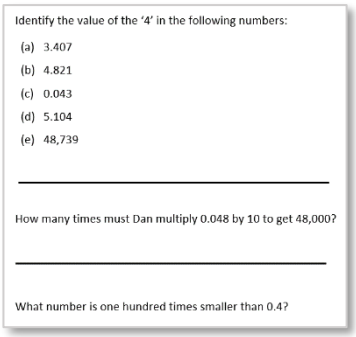
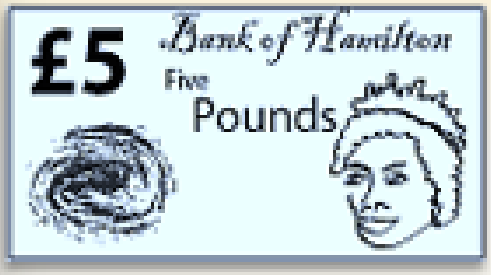
4. Have I mastered the topic? A few questions to **Check your understanding**. Fold the page to hide the answers!



Learning Reminders

Count up to find change from £5.

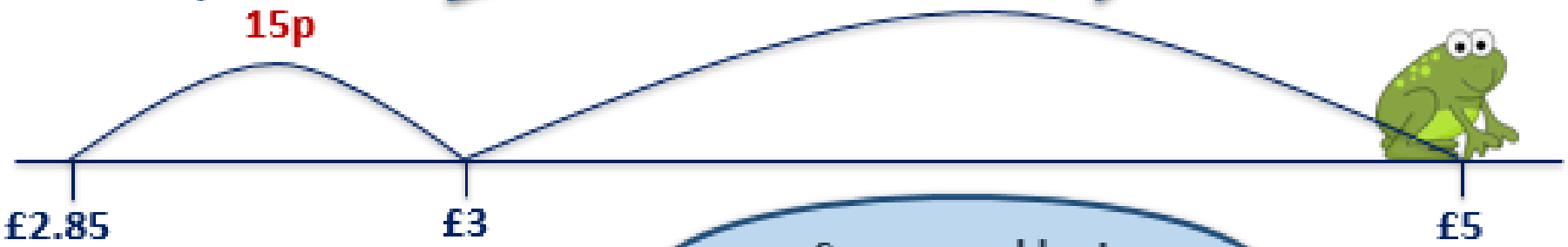


If you have £5 to spend and an item costs £2.85, how could you calculate the change?

Draw a line and mark £2.85 on the left and £5 on the right...

Frog knows that 85 + 15 = 100 so he jumps 15p to £3...

... and then £2 to £5.



So you would get £2.15 change from £5.

Learning Reminders

Count up to find change from £10.

This time you have £10 and the item costs £5.48.

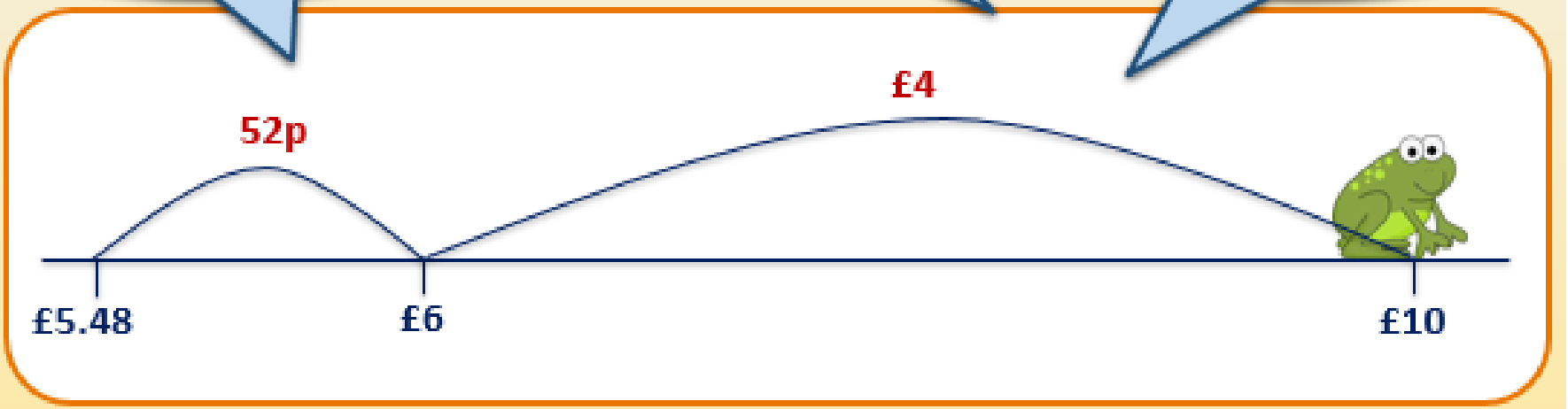
Draw a line and mark £5.48 on the left and £10 on the right...

Frog's ready to go!

How far to the next pound?

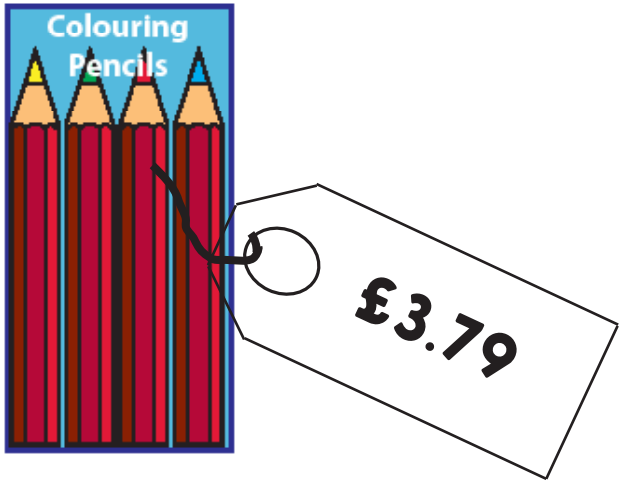
How much more to £10?

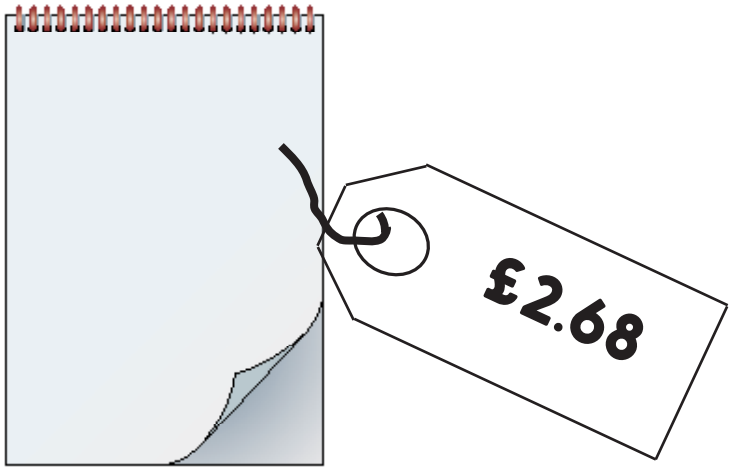
How much change this time?



Practice Sheet Mild

Finding change





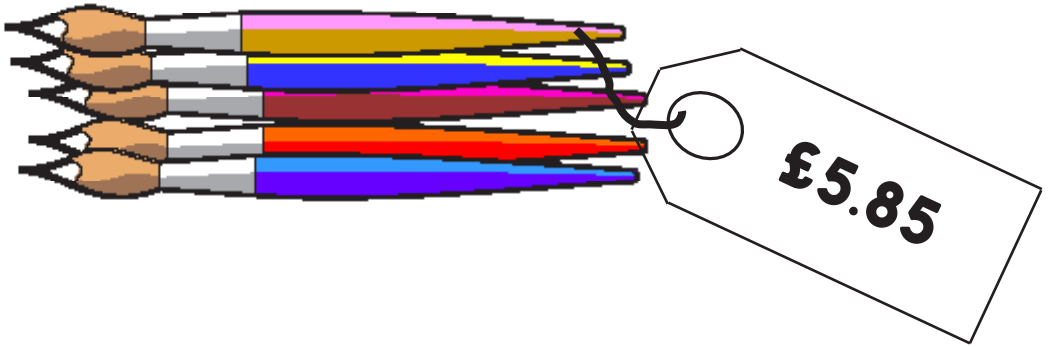
Find the change from £5 for each of these six prices.

Challenge

I spend £2.42. Do I have enough money left to buy a notebook?

Practice Sheet Hot

Finding change



Find the change from £10 for each of these six prices.

Challenge

I use a £20 note and buy an item for £10.13. My change is £9.87 which has consecutive digits 9, 8, 7.
Can you find other prices where my change from £20 would be a number with consecutive digits?

Practice Sheet Answers

Finding change (mild)

Colouring pencils: £5.00 - £3.79 = £1.21
Pad of paper: £5.00 - £2.68 = £2.32
Ticket 1: £5.00 - £2.85 = £2.15
Ticket 2: £5.00 - £3.39 = £1.61
Ticket 3: £5.00 - £1.78 = £3.22
Ticket 4: £5.00 - £2.22 = £2.78

Challenge

No. Spending £2.42 only leaves you £2.58, which is not enough for a notebook that costs £2.68.

Finding change (hot)

Paint set: £10.00 - £7.79 = £2.21
Brushes: £10.00 - £5.85 = £4.15
Ticket 1: £10.00 - £6.69 = £3.31
Ticket 2: £10.00 - £8.29 = £1.71
Ticket 3: £10.00 - £7.56 = £2.44
Ticket 4: £10.00 - £5.34 = £4.66

Challenge

£20 - £18.77 = £1.23	£20 - £17.66 = £2.34	£20 - £16.55 = £3.45
£20 - £15.44 = £4.56	£20 - £14.33 = £5.67	£20 - £13.22 = £6.78
£20 - £12.11 = £7.89	£20 - £16.79 = £3.21	£20 - £15.68 = £4.32
£20 - £14.57 = £5.43	£20 - £13.46 = £6.54	£20 - £12.35 = £7.65
£20 - £11.24 = £8.76	£20 - £10.13 = £9.87	£20 - £17.90 = £2.10
£20 - £7.66 - £12.34		

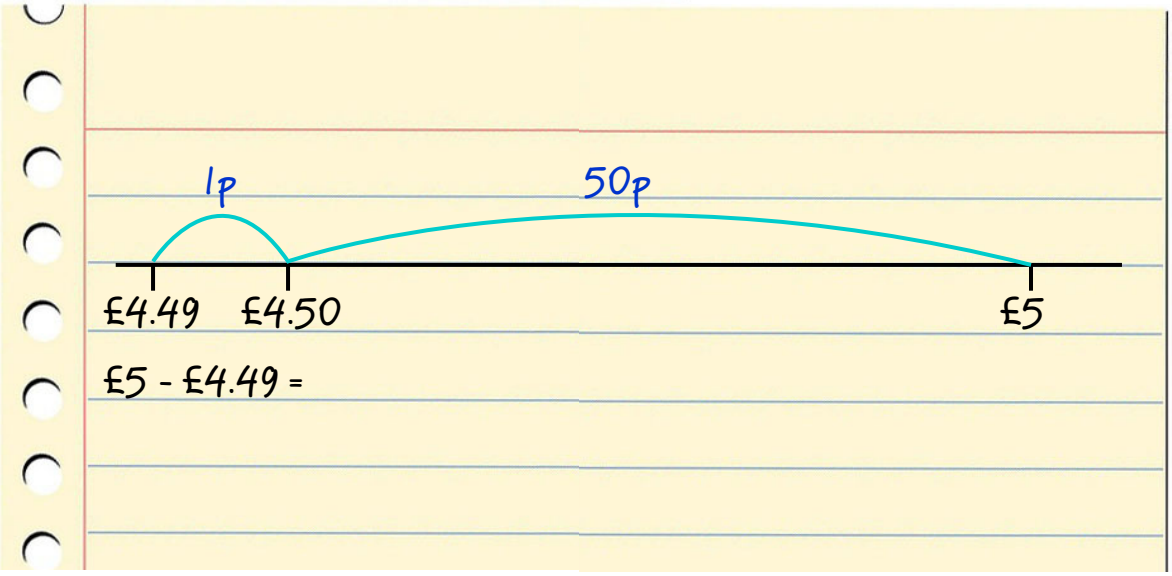
A Bit Stuck?
Winter warmers

Work in pairs

Things you will need:
- A pencil

What to do:

- Take it in turns to choose a hat or a beanie from the web page.
- Use Frog to find the change from £5.
- How many hats can you buy before you run out of time?



S-t-r-e-t-c-h:
Choose two hats and find the change from £10.

Learning outcomes:
- I can use Frog to find the change from £5 (answers less than £1).
- I am beginning to use Frog to find the change from £10.

Hamilton Education go outdoors

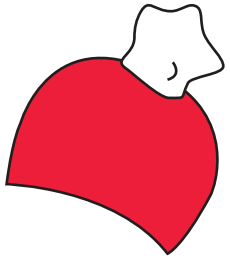
Search GO

Your account Your basket

Men's | Women's | Kid's | Walking | | Running | Climbing | Camping

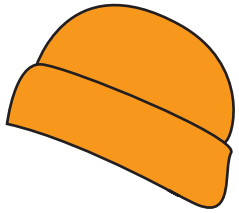
Winter hats

Wrap up and keep warm this winter with our latest range of winter hats.



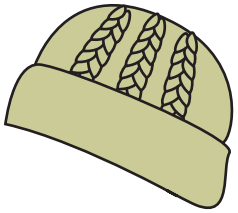
Red pom-pom beanie
£4.49

Add to basket



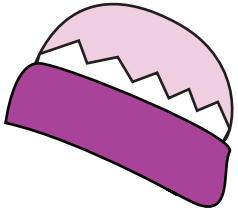
Orange plain knit beanie
£4.85

Add to basket



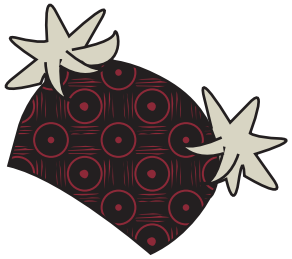
Khkai Aran knit beanie
£4.63

Add to basket



Purple zig-zag striped beanie
£4.75

Add to basket

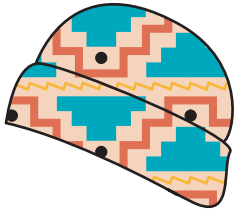


Techno pattern double pom-pom beanie
£4.25

Add to basket

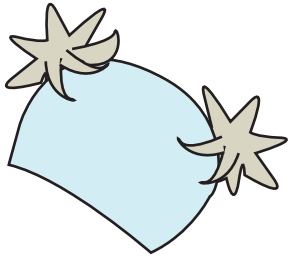
Grey pom-pom beanie
£4.37

Add to basket



Aztec knit beanie
£4.59

Add to basket



Pale blue fluffy pom-pom beanie
£4.46

Add to basket

Check your understanding

Questions

Tim buys a DVD. Frog finds the change from £10, saying it is £3.46. How much was the DVD?

Complete each diagram.

£10	
£6.83	

£5	
	£2.27

£10	
£3.58	

Fold here to hide answers

Check your understanding

Answers

Tim buys a DVD. Frog finds the change from £10, saying it is £3.46. How much was the DVD? £6.54.
Frog jumps 4p, 50p and £6 from £3.46 – some may be able to use complements to 100 and combine the first 2 jumps.

Complete each diagram.

£10	
£6.83	£3.17

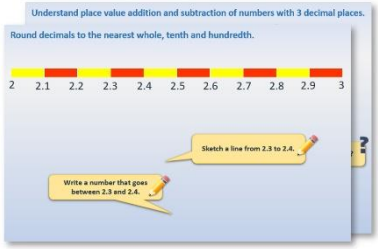
£5	
£2.73	£2.27

£10	
£3.58	£6.42

Year 4: Week 2, Day 4
Subtraction using Frog

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

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



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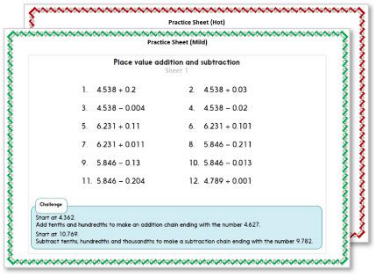
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either Mild (easier) or Hot (harder)! Check the answers.



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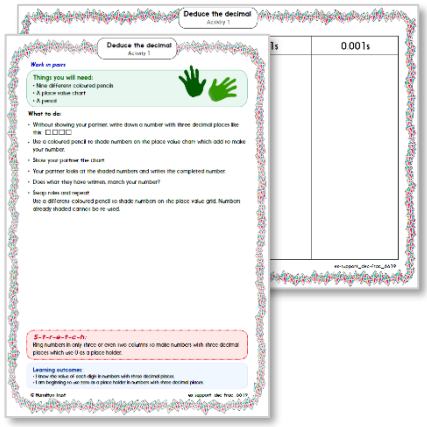
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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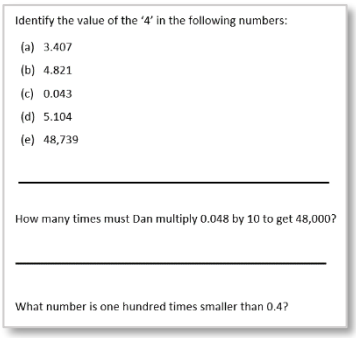
4. Have I mastered the topic? A few questions to **Check your understanding**. Fold the page to hide the answers!

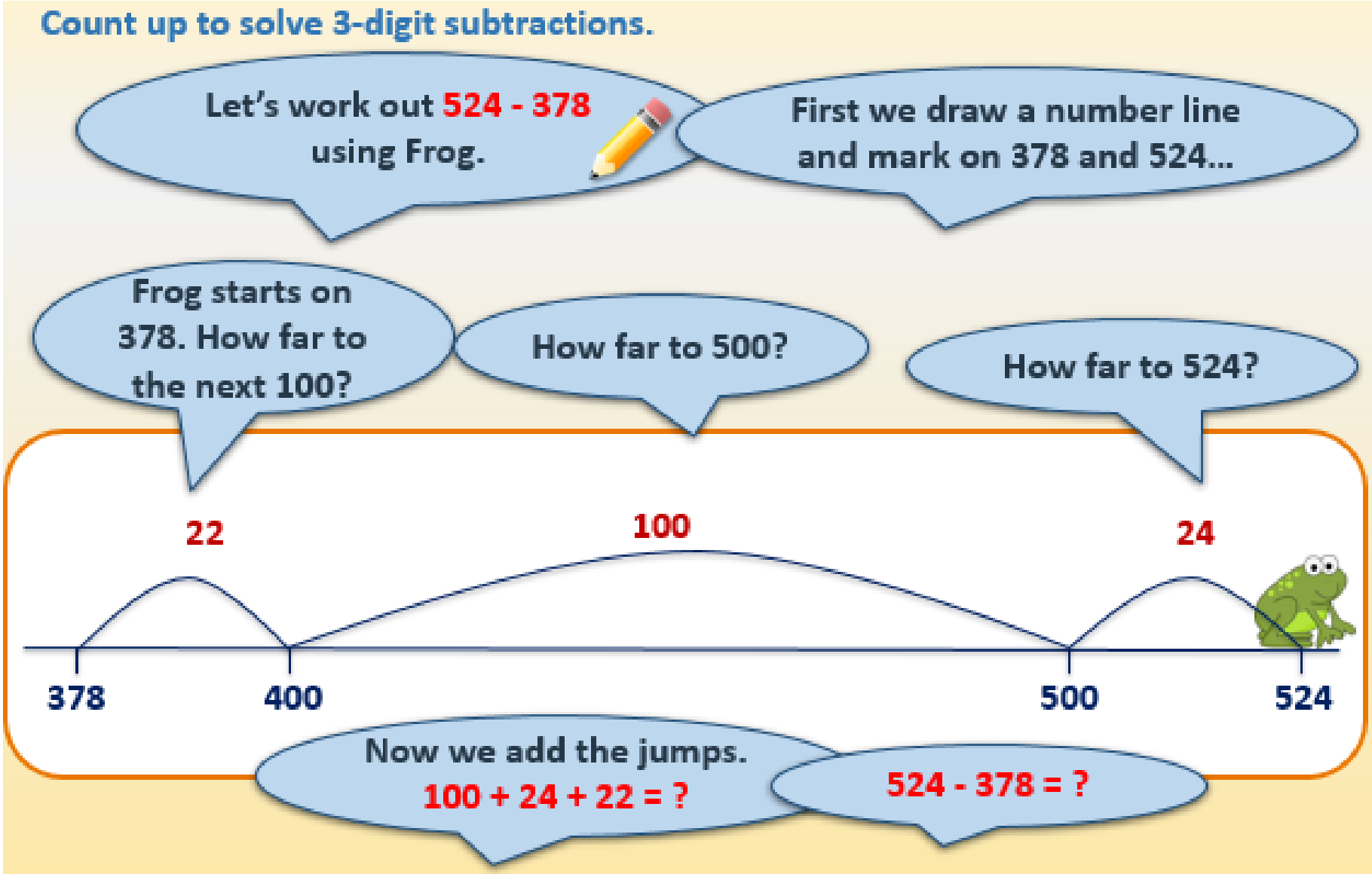

Identify the value of the '4' in the following numbers:

(a) 3.407
(b) 4.821
(c) 0.043
(d) 5.104
(e) 48,739

How many times must Dan multiply 0.048 by 10 to get 48,000?

What number is one hundred times smaller than 0.4?

Learning Reminders



Learning Reminders

Count up to solve 3-digit subtractions.

Some cyclists are cycling from John O'Groats in northern Scotland to Land's End in Cornwall, over 10 days. It's 874 miles! So far, they have cycled 625 miles. How far have they still got to cycle?

How can we find the **difference** between 874 and 625?

We can use Frog!

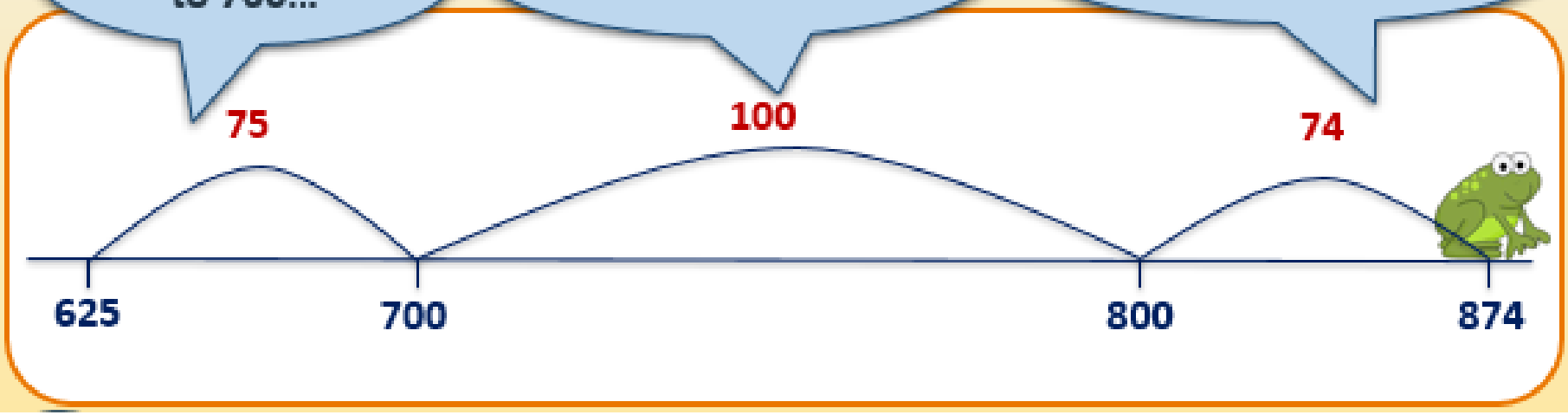
Draw a number line and mark on 625 and 874...

Add 100, 75 and 74 to find how many miles left.

Frog jumps **75** to 700...

... and then **100** to 800...

... then **74** to 874.



Practice Sheet Mild
Counting up

Practise using counting up to solve these subtractions.
Sketch empty number lines to show your steps.

712 – 655

623 – 589

535 – 478

615 – 575

722 – 684

525 – 449

616 – 535

607 – 569

925 – 795

814 – 685

Practice Sheet Hot

Counting up

Sketch an empty number line to help you to calculate these subtractions.

1. 745 - 588
2. 762 - 584
3. 925 - 767
4. 623 - 489
5. 755 - 448
6. 826 - 682
7. 535 - 378
8. 756 - 437
9. 537 - 373
10. 615 - 476
11. 634 - 469
12. 1002 - 735

Challenge

Subtract 989 from 1000. Then subtract 878 from 1000. Then 767, then 656 etc. each from 1000. Describe the pattern of the answers.

Practice Sheet Answers

Counting up (mild)

712 – 655 = 57
535 – 478 = 57
722 – 684 = 38
616 – 535 = 81
925 – 795 = 130

623 – 589 = 34
615 – 575 = 40
525 – 449 = 76
607 – 569 = 38
814 – 685 = 129

Counting up (hot)

1. 745 – 588 = 157
2. 762 – 584 = 178
3. 925 – 767 = 158
4. 623 – 489 = 134
5. 755 – 448 = 307
6. 826 – 682 = 144
7. 535 – 378 = 157
8. 756 – 437 = 319
9. 537 – 373 = 164
10. 615 – 476 = 139
11. 634 – 469 = 165
12. 1002 – 735 = 267

Challenge

1000 - 989 = 11
1000 - 878 = 122
1000 - 767 = 233
1000 - 656 = 344
1000 - 565 = 455

Watch out for the children using appropriate PV vocabulary in their explanations.

A Bit Stuck?

Are we nearly there yet?

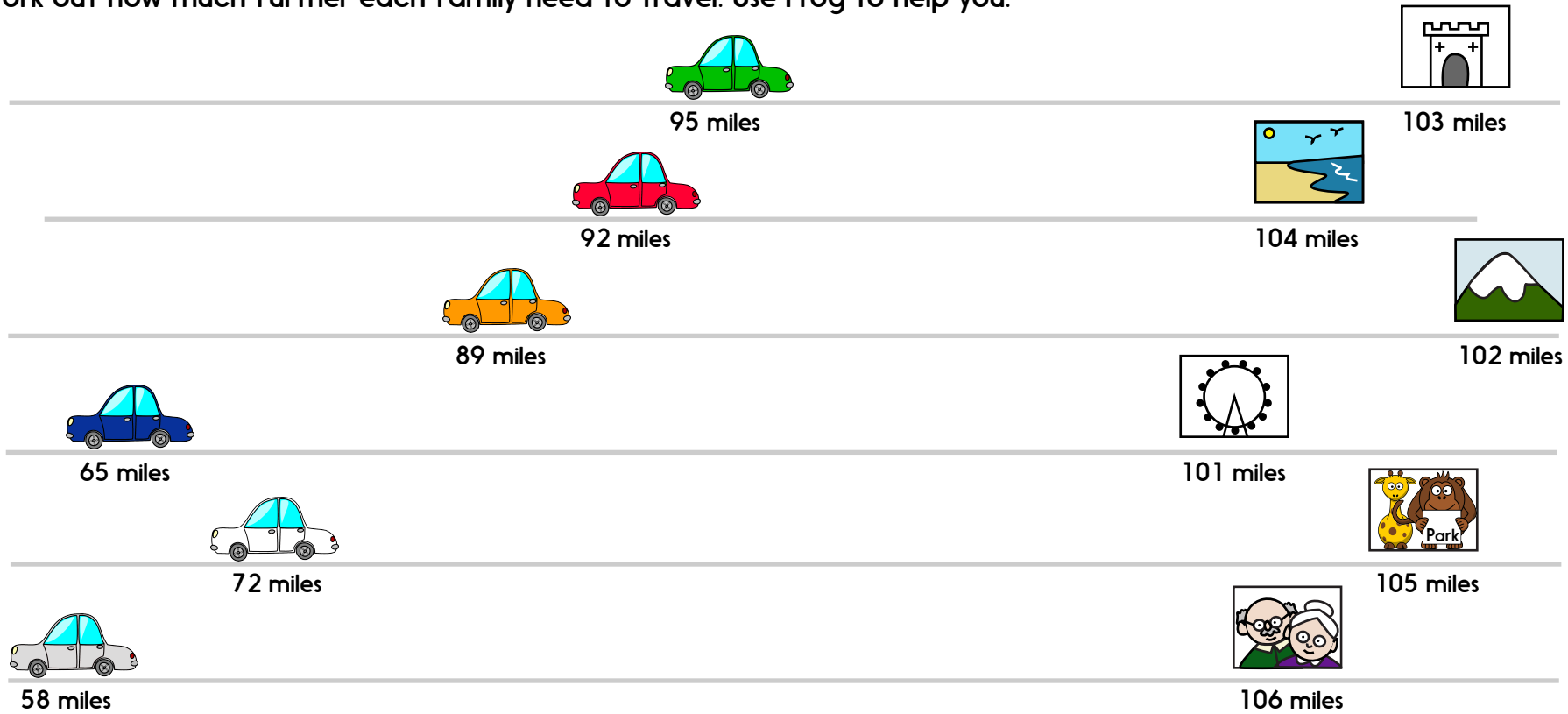
Work in pairs

What to do:

- Families are going for a day out.
  The children keep asking, "Are we nearly there yet?"
- Work out how much further each family need to travel. Use Frog to help you.

Things you will need:

- A pencil



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

Draw your own jottings to work out 204 – 197 and 204 – 89.

Learning outcomes:

- I can use Frog to subtract numbers either side of 100, e.g. 102 – 97 and 102 – 78.
- I am beginning to subtract numbers either side of 200.

Check your understanding

Questions

Complete each diagram.

604	
387	

912	
	868

1003	
578	

Here is Ali's homework.

1. 403 – 265
2. 648 – 356
3. 752 – 199
4. 812 – 754

Advise him on the most efficient or error-proof subtraction strategy to calculate each one, explaining why you are suggesting that method.
Work out the answers.

Check your understanding

Answers

Complete each diagram.

604	
387	217

912	
44	868

1003	
578	425

Here is Ali's homework.

1. 403 – 265
2. 648 – 356
3. 752 – 199
4. 812 – 754

Advise him on the most efficient or error-proof subtraction strategy to calculate each one, explaining why you are suggesting that method.
Work out the answers.

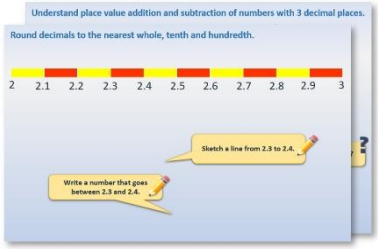
1. 138 – most efficiently solved by Frog.
2. 292 – also solve by Frog, some may prefer column subtraction for this one as neither number is close to a hundreds number, and only one column needs to be adjusted.
3. 553 – subtract 200 and add 1 back.
4. 58 – count up with Frog.

Year 4: Week 2, Day 5

Column subtraction

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

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



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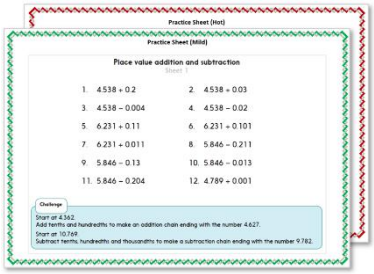

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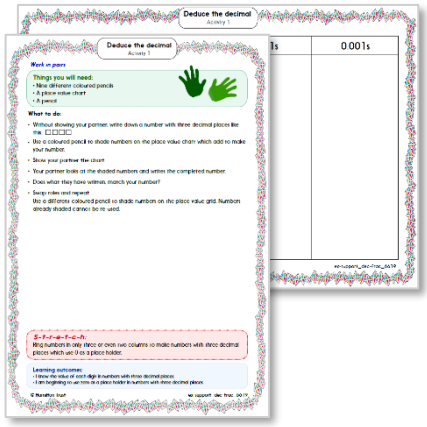

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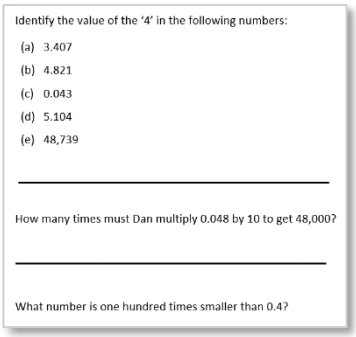


Learning Reminders

Subtract 3-digit numbers using expanded column subtraction.

Let's work out 725 - 462 using **column subtraction.**

First **partition** the numbers and set them out neatly.

Subtract the 1s.
5 - 2 = ?

	600	120	
	~~700~~	~~20~~	5
-	400	60	2
	200	**60**	**3**

60 is bigger than 20 so take 100 from the 700 and add it to the 10s.

Now subtract the 10s.
120 - 60 = ?

Finally recombine 200, 60 and 3.

Subtract the 100s.
600 - 400 = ?

725 - 462 = 263

Learning Reminders

Subtract 3-digit numbers using expanded column subtraction.

Now let's try **745 - 367.**
How many moves across columns will we need this time?

7 is bigger than 5 so take 10 from the 40 and add it to the 1s.

15 - 7 = ?

60 is bigger than 30 so take 100 from the 700 and add it to the 10s..

130 - 60 = ?

Subtract the 100s.
600 - 300 = ?

600	130	15
~~7~~00	~~4~~0	~~5~~
- 300	60	7
300	70	8

Finally recombine 300, 70 and 8.

745 - 367 = 378

Practice Sheet Mild
Expanded subtraction

Use expanded column subtraction to solve these calculations.

1. 265 – 134

2. 598 – 372

3. 682 – 456

4. 364 – 149

5. 472 – 253

6. 745 – 561

7. 874 – 246

8. 855 – 278

9. 952 – 685

10. 344 – 175

11. 535 – 488

12. 746 – 467

Challenge

Write a 3-digit number. Subtract it from 999. Now say the answer if you were to subtract it from 1000. Check using Frog to subtract it from 1000.
Repeat with another 3-digit number.

Practice Sheet Hot

Subtraction

Choose whether to use counting up (Frog) or expanded column subtraction.

453 - 348 =

674 - 427 =

826 - 645 =

725 - 532 =

847 - 673 =

958 - 482 =

607 - 572 =

803 - 641 =

520 - 315 =

630 - 527 =

Practice Sheet Answers

Expanded subtraction (mild)

1.	265 – 134 = 131	2.	598 – 372 = 226
3.	682 – 456 = 226	4.	364 – 149 = 215
5.	472 – 253 = 219	6.	745 – 561 = 184
7.	874 – 246 = 628	8.	855 – 278 = 577
9.	952 – 685 = 267	10.	344 – 175 = 169
11.	535 – 488 = 47	12.	746 – 467 = 279

Subtraction (hot)

453–348 = 105	958–482 = 476
674–427 = 247	607–572 = 35
826–645 = 181	803–641 = 162
725–532 = 193	520–315 = 205
847–673 = 174	630–527 = 103

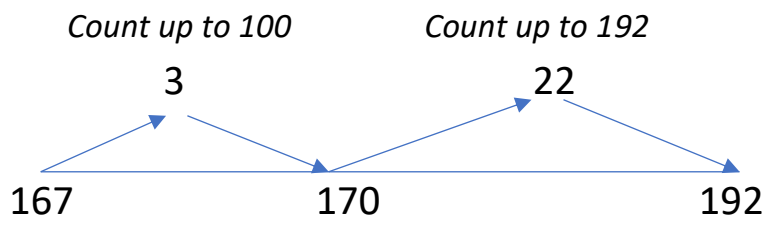
A Bit Stuck?

Parent or carer

Many children at this age find column subtraction very tricky. In this case, we give them more practice on subtracting using the strategy of **counting up** on a number line. This is the method that we all use when finding our change!

Pay £10 Spend £7.25 Count up from £7.25 to £10

So, help your child to do the calculations below by counting up.
Here's the second one. **192 – 167**



Answer is 3 + 22 = 25

You can do every one on the sheet below like this.

This achieves a lot of good things!

- They rehearse the skill of adding to the next multiple of 10 – an absolutely essential skill for numerical fluency.
- They consolidate their understanding of how numbers work – counting from the multiple of 10 to the next number (This is the second hop.)
- They gain confidence, because you can do ANY subtraction this way
- It is a method which is particularly useful for money calculations.

GOOD LUCK!

A Bit Stuck?
Teach the frog

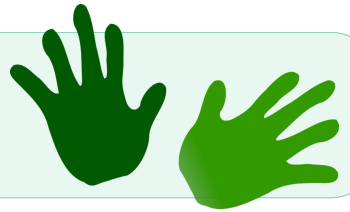
Work in pairs

What to do:

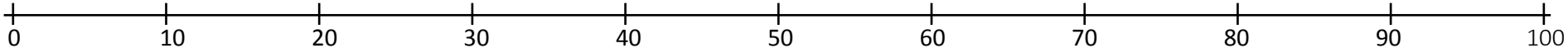
Take it in turns to be the teacher and to be the Frog.
Tell your partner, one step at a time, how to work out the answer to each subtraction.
Remember to use your skills in subtracting 2-digit numbers to help you to subtract 3-digit numbers.

Things you will need:

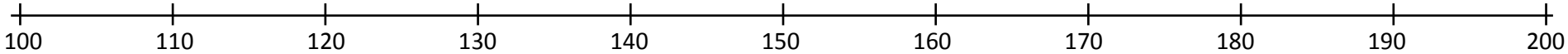
- A pencil



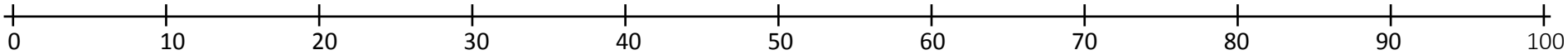
1. 92 - 67 =



2. 192 - 167 =

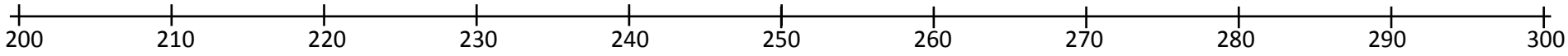


3. 83 - 45 =

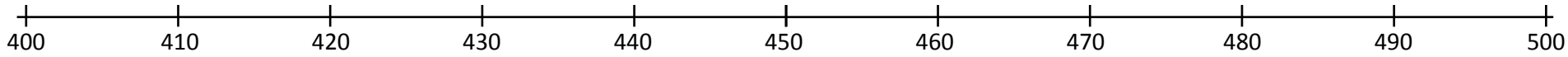


A Bit Stuck?
Teach the frog

4. 283 - 267 =



5. 452 - 437 =



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

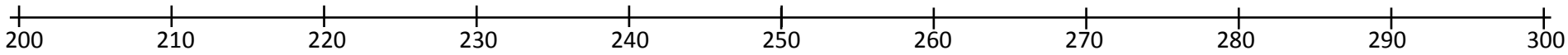
Draw your own number line jottings to work out 354 – 337 and 572 – 549.

Learning outcomes:

- I can use Frog to subtract pairs of 2-digit numbers, using a landmarked line to help.
- I can use Frog to subtract pairs of 3-digit numbers, within the same century, using a landmarked line to help.
- I am beginning to sketch my own number line jottings when using Frog.

A Bit Stuck?

Teach the frog



Check your understanding

Questions

Complete this calculation that uses ‘column subtraction’:

	700	30	7
–	300	60	5

Fill the gaps in this subtraction:

81☐ – 4☐7 = ☐46

Fold here to hide answers

Check your understanding

Answers

Complete this calculation that uses ‘column subtraction’:

	600	130	
	~~700~~	~~30~~	7
-	300	60	5
	300	70	2

Fill the gaps in this subtraction:

8 1[3] – 4[6]7 = [3]4 6

Probably best-solved by setting out as a column subtraction.