Week 11, Day 1
Revise column subtraction of 3-digit numbers
Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. If possible, watch the **PowerPoint presentation** with a teacher or another grown-up.
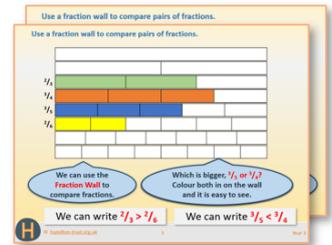
   OR start by carefully reading through the **Learning Reminders**.
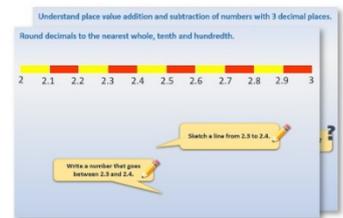
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either Mild (easier) or Hot (harder)! Check the answers.
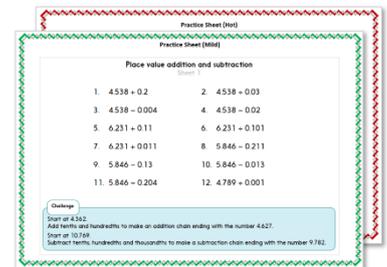
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**
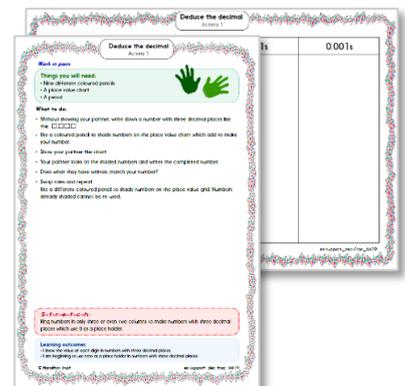
4. Think you've cracked it? Whizzed through the Practice Sheets? Have a go at the **Investigation**…

Learning Reminders

Revise column subtraction of 3-digit numbers.

543 - 367

337 - 128

481 - 236

Which do you think will have the biggest answer and which will have the smallest answer?

500 - 400 = 100

300 - 100 = 200

500 - 200 = 300

*We can **round** the numbers to the nearest 100 to help decide.*

540 - 370 = 170

340 - 130 = 210

480 - 240 = 240

We can round to the nearest 10 to find more accurate approximations.

Learning Reminders

Revise column subtraction of 3-digit numbers.

We can use **expanded** or **compact** column subtraction to subtract 367 from 543.

```
         130
   400  3̶0̶ 13
   5̶0̶0̶ 4̶0̶ 3̶
 - 300  60  7
 ─────────────
   100  70  6
```

100 + 70 + 6 = 176.

```
       13
   4 3̶ 13
   5̶ 4̶ 3̶
 - 3 6 7
 ─────────
   1 7 6
```

Learning Reminders

Revise column subtraction of 3-digit numbers.

```
543 - 367 = 176
337 - 128
481 - 236
```

```
500 - 400 = 100
300 - 100 = 200
500 - 200 = 300
```

```
540 - 370 = 170
340 - 130 = 210
480 - 240 = 240
```

> Work out the exact answer to the other two subtractions and compare them with the approximations.

> In today's exercises try **estimating** before working out the exact answer.

Answers

209, 245.

Subtracting 3-digit numbers

Use your choice of expanded or compact column subtraction to calculate the answers. Watch out for one or two questions that might be more efficiently solved by counting up (using 'Frog').

e.g.
```
          50  13
     400  6̶0̶  3̶
   – 100  20   7        463 – 127 = 336
     300  30   6
```

1. 654 – 327

2. 873 – 428

3. 625 – 371

4. 748 – 452

5. 923 – 658

6. 502 – 489

7. 834 – 536

8. 710 – 678

Practice Sheet Hot
Subtracting 3-digit numbers

Estimate each answer, then use compact column subtraction to calculate the answers. Watch out for one or two questions that might be more efficiently solved by counting up (using 'Frog').

1. 654 – 327

2. 873 – 428

3. 625 – 371

4. 748 – 452

5. 923 – 658

6. 502 – 489

7. 834 – 536

8. 710 – 678

9. 927 – 560

10. 646 – 487

Challenge

Use the digits 4, 5, 6, 7, 8, 9 to create a 3-digit subtraction with an answer between 250 and 300.

Practice Sheets Answers

Subtracting 3-digit numbers (mild)

1.   654 - 327 = 327
2.   873 - 428 = 445
3.   625 - 371 = 254
4.   748 - 452 = 296
5.   923 - 658 = 265
6.   502 - 489 = 13
7.   834 - 536 = 298
8.   710 - 678 = 32

Questions 6 and 8 might be best solved using counting up (Frog).

Subtracting 3-digit numbers (hot)

1.   654 - 327 = 327
2.   873 - 428 = 445
3.   625 - 371 = 254
4.   748 - 452 = 296
5.   923 - 658 = 265
6.   502 - 489 = 13
7.   834 - 536 = 298
8.   710 - 678 = 32
9.   927 - 569 = 358
10.   646 - 487 = 159

Questions 6 and 8 might be best solved using counting up (Frog).

Challenge

Use the digits 4, 5, 6, 7, 8, 9 to create a 3-digit subtraction with an answer between 250 and 300.

e.g. 974 - 685 = 289
      756 - 489 = 267

Explore more Hamilton Trust Learning Materials at https://wrht.org.uk/hamilton

You will need:
- 1p and 10p coins

What to do:
- We want to find 71 - 47.
- Set it out as an **expanded** column subtraction and count out 71p in 10p and 1p coins:

```
  70   1
- 40   7
```

- 7 is larger than 1 so we **exchange** one 10p coin for ten 1ps:

```
  60   11
  70   1
- 40   7
```

- 11 - 7 = 4 and 60 - 40 = 20:

```
  60   11
  70   1
- 40   7
  20   4
```

  71 - 47 = 24

- Now try these questions, setting out in columns and using the coins to help.

  1.   73 - 28   2.   64 - 19

  3.   82 - 54   4.   91 - 68

  5.   74 - 38

Investigation
Subtraction estimations

1 2 3 4 5 6 7 8 9

- Choose 6 of these number cards.

- Use the 6 cards to make 3 different subtractions, e.g.

    Pick 1, 2, 5, 6, 7 and 9

    921 – 657   612 - 597   756 - 129

- Estimate each answer. Now write the estimated answers, least to greatest.

- Use compact column subtraction to find some of the exact answers but also watch out for any where it is more efficient to use counting up (Frog), e.g. 612 - 597.

- If you were correct in predicting the order, score 10 points.

- Repeat several times, each time choosing a different set of 6 cards. How many rounds will it take you to score 50 points?

Mild version
Make two different subtractions with your six cards and predict which will give the larger answer.

Challenge version
Make four different subtractions with your six cards and predict the order of the answers, least to greatest.