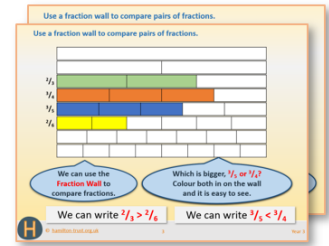


Week 9, Day 1

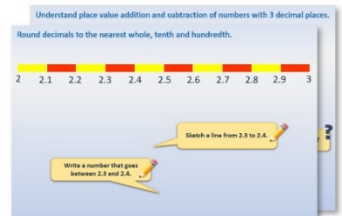
Add/ subtract 1, 10, 100, 1000, 10,000 and 100,000 to/ from 6-digit numbers

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

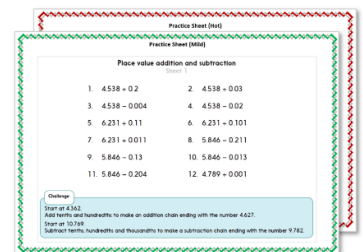
1. If possible, watch the **PowerPoint presentation** with a teacher or another grown-up.



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

Add and subtract 1, 10, 100, 1000, 10,000 and 100,000 to/from 6-digit numbers.

457,849

Read large numbers carefully!
That's four hundred and fifty seven
thousand, eight hundred and forty nine
NOT 4-5-7-8-4-9.

Use place value to find numbers less
than 457,849.

10 less is
457,8**39**

100 less is
457,**7**49

1000 less is
45**6**,849

10,000 less
is 4**4**7,849

Learning Reminders

Add and subtract 1, 10, 100, 1000, 10,000 and 100,000 to/from 6-digit numbers.

457,849

We can find 10, 100, 1000 or 10,000 more than 457,849 in the same way.

10 more is
457,8**59**

100 more is
457,**9**49

1000 more
is 45**8**,849

10,000 more
is 4**6**7,849

Learning Reminders

Add and subtract 1, 10, 100, 1000, 10,000 and 100,000 to/from 6-digit numbers.

230,193

Let's practise with these numbers...

10 more than 230,193 is 230,**203**; two digits have changed.

1000 more than 230,193 is 2**31**,193

352,605

Usually 1 digit changes. But be careful when there is a 9 or a 0 in the same place that you are adding or subtracting from.

10 less than 352,605 is 352,**595**; two digits have changed.

1000 less than 352,605 is 3**51**,605

Practice Sheet Mild

Adding and subtracting 1, 10, 100, 1000, 10,000 and 100,000

- | | | | | | |
|----|---------------------|--------------------|----|----------------------|---------------------|
| 1. | $456,237 + 1,$ | $456,237 - 1$ | 6. | $345,784 + 100,000,$ | $345,784 - 100,000$ |
| 2. | $578,483 + 10,$ | $578,483 - 10$ | 7. | $456,378 + 20,$ | $456,378 - 20$ |
| 3. | $347,329 + 100,$ | $347,329 - 100$ | 8. | $235,429 + 300,$ | $235,429 - 300$ |
| 4. | $235,820 + 1000,$ | $235,820 - 1000$ | 9. | $428,375 + 20,000$ | $428,375 - 20,000$ |
| 5. | $658,231 + 10,000,$ | $658,231 - 10,000$ | | | |

Challenge

Subtract multiples of 1, 10, 100, 1000, 10,000 and 100,000 from 659,174 to give an answer of 111,111.

Practice Sheet Hot

Adding and subtracting 1, 10, 100, 1000, 10,000 and 100,000

1. $345,784 + 100,000$, $345,784 - 100,000$

2. $456,378 + 20$, $456,378 - 20$

3. $235,429 + 300$, $235,429 - 300$

4. $428,375 + 20,000$, $428,375 - 20,000$

5. $324,790 + 10$, $324,790 - 10$

6. $473,699 + 1$, $473,699 - 1$

7. $299,999 + 1$, $299,999 - 1$

8. $500,000 - 1$, $500,000 - 10$

9. $300,000 - 100$, $300,000 - 1000$

Challenge

Subtract multiples of 1, 10, 100, 1000, 10,000 and 100,000 from 659,174 to give an answer of 111,111.

Practice Sheets Answers

Adding and subtracting 1, 10, 100, 1000, 10,000 and 100,000 (mild)

- | | |
|----------------------------------|-------------------------------|
| 1. $456,237 + 1 = 456,238$ | $456,237 - 1 = 456,236$ |
| 2. $578,483 + 10 = 578,493$ | $578,483 - 10 = 578,473$ |
| 3. $347,329 + 100 = 347,429$ | $347,329 - 100 = 347,229$ |
| 4. $235,820 + 1000 = 236,820$ | $235,820 - 1000 = 234,820$ |
| 5. $658,231 + 10,000 = 668,231$ | $658,231 - 10,000 = 648,231$ |
| 6. $345,784 + 100,000 = 445,784$ | $345,784 - 100,000 = 245,784$ |
| 7. $456,378 + 20 = 456,398$ | $456,378 - 20 = 456,358$ |
| 8. $235,429 + 300 = 235,729$ | $235,429 - 300 = 235,129$ |
| 9. $428,375 + 20,000 = 448,375$ | $428,375 - 20,000 = 408,375$ |

Challenge

$$659,174 - 500,000 - 40,000 - 8000 - 60 - 3 = 111,111$$

Adding and subtracting 1, 10, 100, 1000, 10,000 and 100,000 (hot)

- | | |
|----------------------------------|-------------------------------|
| 1. $345,784 + 100,000 = 445,784$ | $345,784 - 100,000 = 245,784$ |
| 2. $456,378 + 20 = 456,398$ | $456,378 - 20 = 456,358$ |
| 3. $235,429 + 300 = 235,729$ | $235,429 - 300 = 235,129$ |
| 4. $428,375 + 20,000 = 448,375$ | $428,375 - 20,000 = 408,375$ |
| 5. $324,790 + 10 = 324,800$ | $324,790 - 10 = 324,780$ |
| 6. $473,699 + 1 = 473,700$ | $473,699 + 10 = 473,709$ |
| 7. $299,999 + 1 = 300,000$ | $299,999 - 1 = 299,998$ |
| 8. $500,000 - 1 = 499,999$ | $500,000 - 10 = 499,990$ |
| 9. $300,000 - 100 = 299,900$ | $300,000 - 1000 = 299,000$ |

Challenge

$$659,174 - 500,000 - 40,000 - 8000 - 60 - 3 = 111,111$$

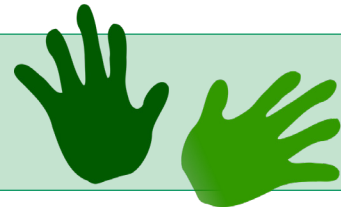
A Bit Stuck?

Is that your final answer?

Work in pairs

Things you will need:

- A pencil
- +/- 1, 10, 100, 1000 and 10,000 cards



What to do:

- Shuffle the +/- 1, 10, 100, 1000 and 10,000 cards.
- Take three.
- Both of you write 55,555 at the top of a piece of paper.
- Add or subtract the number on the first card. Write the answer underneath 55,555.
- Add or subtract the number on the next card. Write the new answer.
- Finally add or subtract the number on the last card. Write the answer.
- Both say your final answer. Did you both say the same number? If so, you win 1000 points.
- See if you can win 10,000 points before time is up!

55,555
54,555
54,655
64,655

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

Secretly choose a card. Start with 55,555 and add/subtract the number on the card. Write the answer and show it to your partner. Can your partner guess what was on the card? Swap roles and repeat.

Learning outcomes:

- I know the value of each digit in 5-digit numbers.
- I can add and subtract 1, 10, 100, 1000 and 10,000 to/from 5-digit numbers.
- I am beginning to use place value to identify what has been added/subtracted to make a 5-digit number.

A Bit Stuck?
Is that your final answer?

+1

+10

+100

+1000

+10,000

-1

-10

-100

-1000

-10,000

Investigation

Lost digit

1. Ask your partner to write a six-digit number – all the digits must be different.
2. Add the digits and keep adding to find the digital root of the number. Write this down.
3. Ask your partner to take their original six-digit number and, without showing you, to cross out one of the digits. They note the digit they crossed out and also its value.
4. They write the other digits in order as a five-digit number. They do not show you this number!
5. Ask them to subtract the digital root you wrote down from their new number.
6. Ask them to add the digits of their answer and keep adding to find its digital root. They tell you its digital root, but still do not show you their number!
7. Subtract their digital root from 9. This will be the digit that they crossed out. Say its value (refer to the original number).
8. Repeat, swapping roles.

639572
$6 + 3 + 9 + 5 + 7 + 2 = 32$
$3 + 2 = 5$
639572 70

Try this at least three times each, so you have tried at least six numbers.
Remember their digits must always be different.
Does it always work?

Try different types of number, e.g. five-digit or four-digit numbers; multiples of 10 or 100; even numbers, odd numbers, etc.

Can you make any suggestions as to why 9 is crucial?