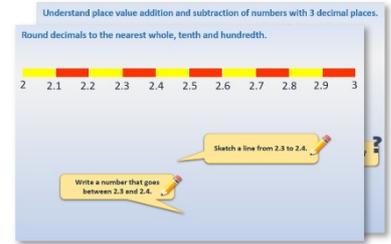


Year 5: Week 1, Day 3

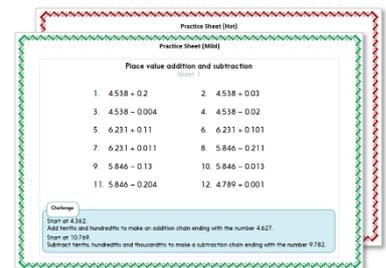
Counting up to subtract; solve subtraction problems

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

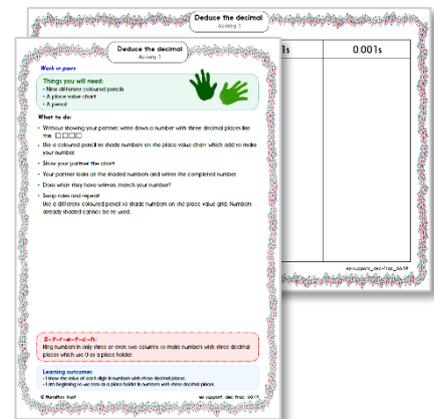
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



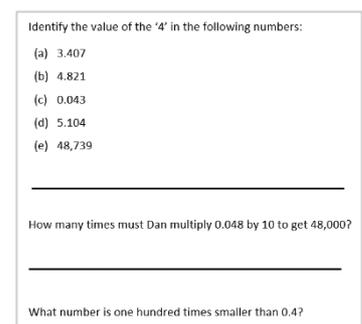
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



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



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



Learning Reminders

Revising 'Counting up' to solve subtractions.

Find $524 - 378$ using 'Frog' (counting up to find a difference).

How far to the next 100? How far to 500? How far to 524?

22 100 24

378 400 500 524

Finally, add the hops:
 $100 + 24 + 22 = 146$

Subtraction: Why count up?

Choose counting up when vertical decomposition would result in lots of exchanging across columns...

3 9 13
~~4 0 3~~
 - 2 6 7

 1 3 6

$403 - 267 = 136$

$103 + 30 + 3 = 136$

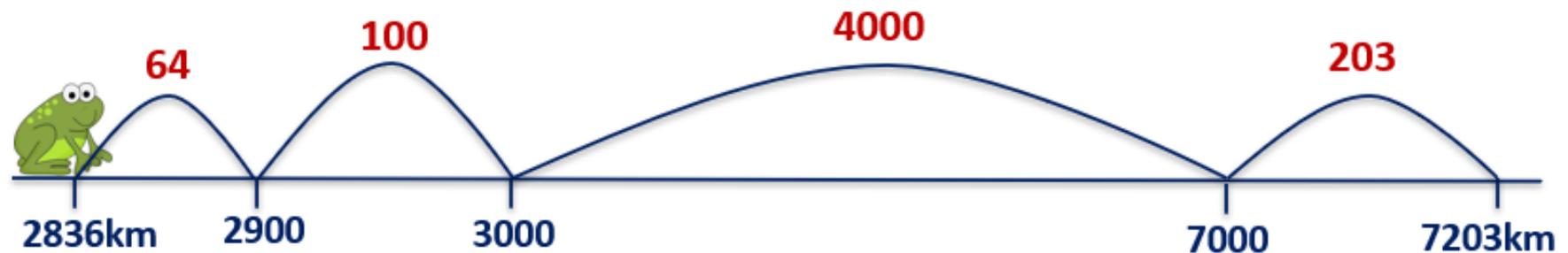
3 30 103

267 270 300 403

Learning Reminders

'Counting up' to solve subtraction problems.

Ally is cycling across America, a total distance of 7203km!
She has already covered 2836km, so how far is left to cycle...?!



Don't forget to add the hops:

$$4000 + 203 + 100 + 64 = 4367\text{km}$$

Practice Sheet for All Multiples of 100

Draw number lines to show Frog solving these problems:

1. $1000 - 573$
2. $2000 - 1958$
3. $6000 - 5839$
4. $4000 - 2748$
5. $5000 - 2349$
6. $9000 - 4275$
7. $8000 - 5624$
8. $7000 - 3453$
9. $3000 - 2222$
10. $6000 - 3333$

Challenge

Look at your number lines. Can you find some ways to solve the problems with fewer jumps?

Practice Sheet Mild

Addition and subtraction problems

1. + 320 = 850

2. 1000 - = 678

3. 920 - = 480

4. - 420 = 370

5. 3200 + = 7800

6. 7000 - = 4579

7. 9400 - = 4900

8. - 2300 = 5800

9. Adam has 520 health points. He finds a potion and ends up with 770 health points. How many points did he earn from the potion?
10. Caitlin has 3475 experience points. She needs 5000 experience points to enter the next world. How many more experience points does she need?
11. Sasha lost 240 health points. Now she has 570 health points. How many health points did she have to start with?
12. Niall had 4500 experience points. By the end of the school holidays, he had 7200 experience points! How many experience points did he gain?

Practice Sheet Hot

Addition and subtraction problems

1. $4500 + \text{ } = 7200$

2. $8100 - \text{ } = 4600$

3. $7000 - \text{ } = 3542$

4. $\text{ } - 3400 = 2700$

5. Stefan has 4783 health points. He was at full health at 8000 points. How many points has he lost?

6. Phoebe has 460 health points. She drinks a green potion worth 240 points and a blue potion. She ends up with 950 health points. How many points was the blue potion worth?

7. Ahmed earns 4700 experience points and now has 9200 experience points. How many points did he have before?

8. Charmaine has 7300 experience points. She needs 9000 points to get the next level. Should she choose to try and solve a puzzle worth 1800 points or a puzzle worth 1600 points?

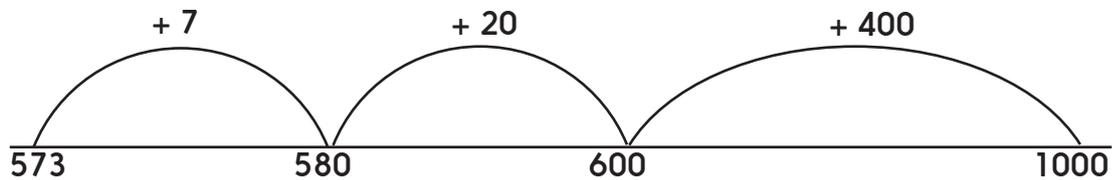
9. Toby has 3400 health points. He drinks potions worth 2300 and 1600 points. He wants to get to full health which is 8000 points. How many more points will he need?

10. Write your own computer game word problem to go with $\text{ } + 3600 = 8400$.

Practice Sheets Answers

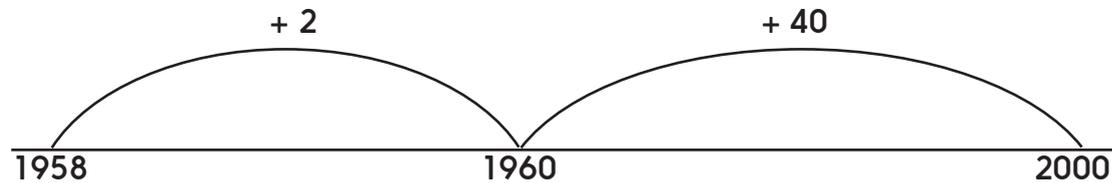
Multiples of 1000 (Practice for all)

1. $1000 - 573$



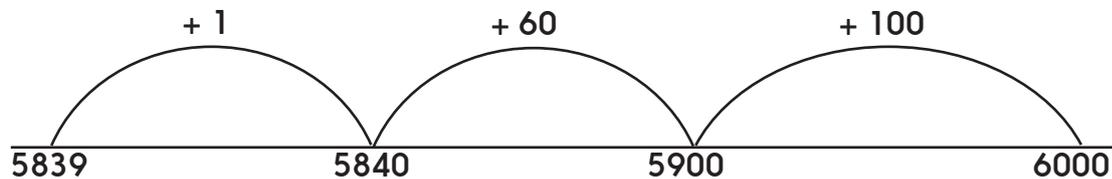
Add the hops: $400 + 20 + 7 = 427$

2. $2000 - 1958$



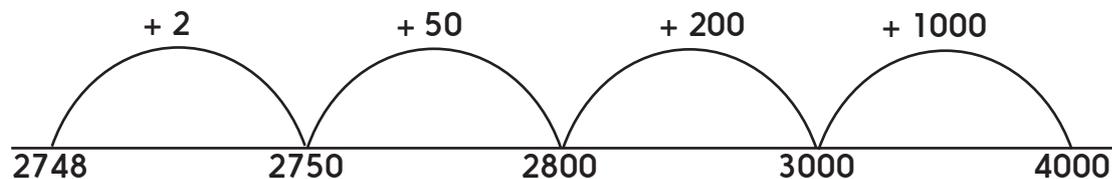
Add the hops: $40 + 2 = 42$

3. $6000 - 5839$



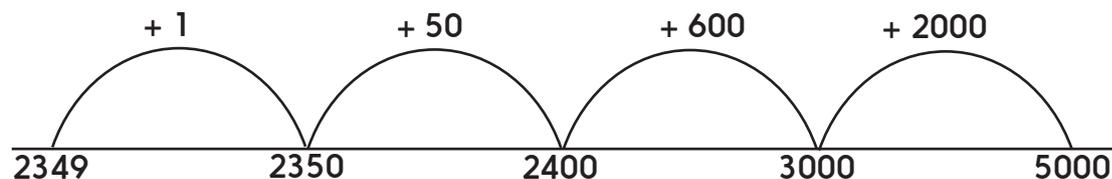
Add the hops: $100 + 60 + 1 = 161$

4. $4000 - 2748$



Add the hops: $1000 + 200 + 50 + 2 = 1252$

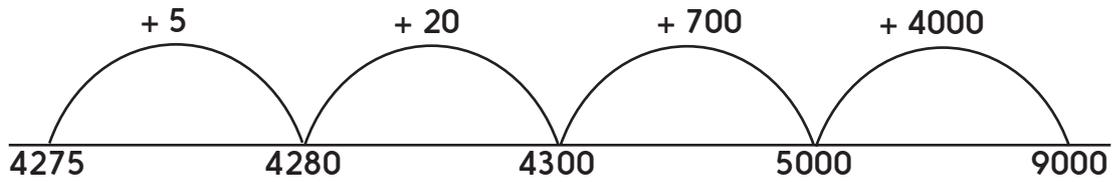
5. $5000 - 2349$



Add the hops: $2000 + 600 + 50 + 1 = 2651$

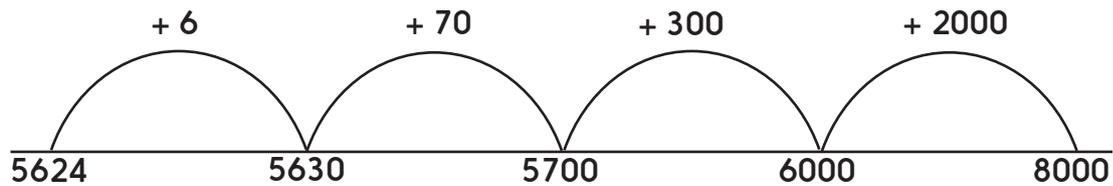
Multiples of 1000 (Practice for all) continued

6. $9000 - 4275$



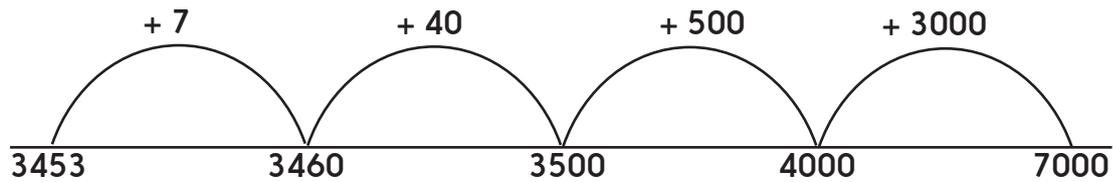
Add the hops: $4000 + 700 + 20 + 5 = 4725$

7. $8000 - 5624$



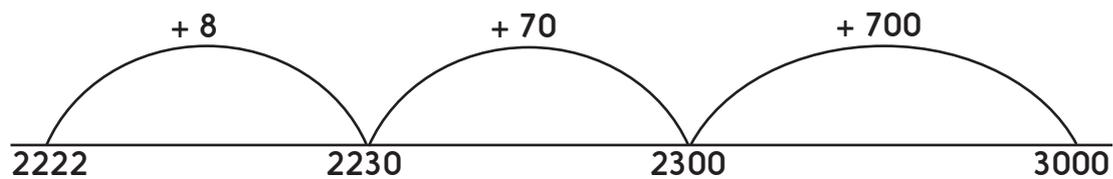
Add the hops: $2000 + 300 + 70 + 6 = 2376$

8. $7000 - 3453$



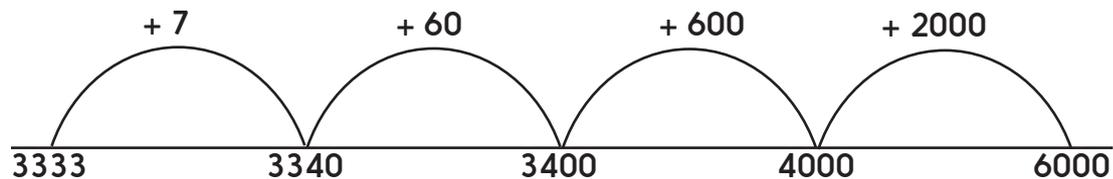
Add the hops: $3000 + 500 + 40 + 7 = 3547$

9. $3000 - 2222$



Add the hops: $700 + 70 + 8 = 778$

10. $6000 - 3333$



Add the hops: $2000 + 600 + 60 + 7 = 2667$

Addition and subtraction problems (mild)

1. $530 + 320 = 850$
2. $1000 - 322 = 678$
3. $920 - 440 = 480$
4. $790 - 420 = 370$
5. $3200 + 4600 = 7800$
6. $7000 - 2421 = 4579$
7. $9400 - 4900 = 4500$
8. $8100 - 2300 = 5800$
9. $770 - 520 = 250$ Adam earned **250 points** from the potion.
10. $5000 - 3475 = 1525$ Caitlin needs **1525 points**.
11. $570 + 240 = 810$ Sasha had **810 points** to start with.
12. $7200 - 4500 = 2700$ Niall gained **2700 points**.

Addition and subtraction problems (hot)

1. $4500 + 2700 = 7200$
2. $8100 - 3500 = 4600$
3. $7000 - 3458 = 3542$
4. $6100 - 3400 = 2700$
5. $8000 - 3217 = 4783$ Stefan has lost **3217 points**.
6. $460 + 240 = 700$ $950 - 700 = 250$. The blue potion is worth **250 points**.
7. $9200 - 4700 = 4500$ Ahmed had **4500 points** before.
8. $9000 - 7300 = 1700$ **Charmaine needs to solve a puzzle worth 1800 points**.
9. $3400 + 2300 + 1600 = 7300$ $8000 - 7300 = 700$. Toby needs **700 more points**.
10. **Check that your questions correctly identify the need to use the calculation $4800 + 3600 = 8400$.**

A Bit Stuck? Hop to hundreds, and beyond!

Work in pairs

Things you will need:

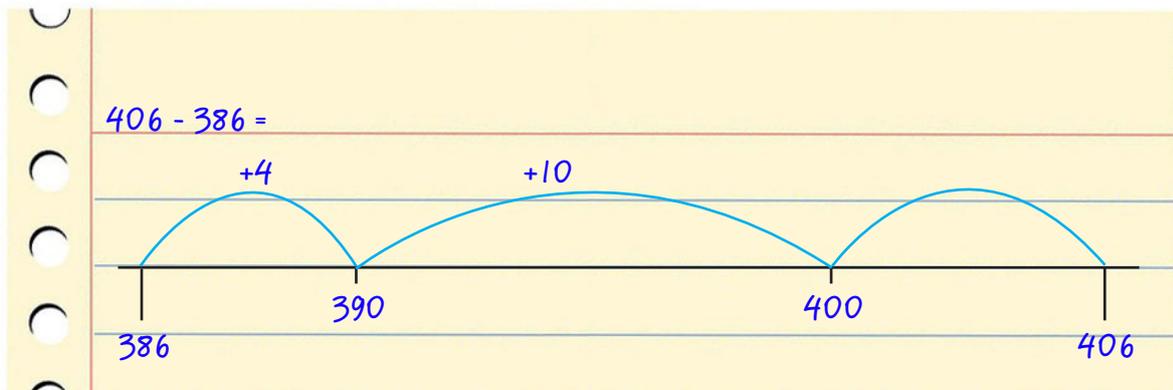
- A pencil



What to do:

- Tell your partner, one step at a time, how to calculate the answer to the subtraction.
Does it need a hop in ones to the next 100, then another small hop, or will you need to jump some tens too?
- Answer as many subtractions as you can.

Hop, hop	Hop, jump, hop
305 – 298	406 – 386
802 – 794	203 – 175
603 – 597	501 – 468
506 – 495	604 – 559



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

Choose two subtractions from the hop, hop section to check using addition.

Learning outcomes:

- I can use counting up (Frog) to subtract 3-digit numbers either side of a multiple of 100, e.g. $304 - 297$, then $304 - 267$.
- I am beginning to use addition to check subtraction.

Check your understanding

Questions

Never, sometimes, always true?

- Subtracting a 4-digit number from a multiple of 10,000 gives a 4-digit answer.
 - The difference between two 5-digit multiples of 1000 is a multiple of 1000.
-

Complete the calculations:

- (a) $[\quad] + 23,478 = 30,000$
(b) $8100 - [\quad] = 6600$
(c) $5999 = [\quad] - 3578$

Fold here to hide answers:

Check your understanding

Answers

Never, sometimes, always true?

- Subtracting a 4-digit number from a multiple of 10,000 gives a 4-digit answer.

This happens only when subtracting from 10,000 itself, e.g. $10,000 - 8560 = 1440$.

However, if a number 9001 or greater is subtracted from 10,000, a 3-digit number (or fewer) will be the result, e.g. $10,000 - 9285 = 715$.

Also, a 5-digit answer occurs when starting with other multiples of 10,000, e.g. $30,000 - 2350 = 27,650$.

- The difference between two 5-digit multiples of 1000 is a multiple of 1000.

Always true, e.g. $48,000 - 23,000 = 25,000$. Since the numbers are multiples of 1000, their difference must be too.

Give examples to illustrate explanations whenever possible.

Complete the calculations:

- (a) $6522 + 23,478 = 30,000$
(b) $8100 - 1500 = 6600$
(c) $5999 = 9577 - 3578$