# 1. Numbers to 1 000 000



Name _____ Class _____ Date _____

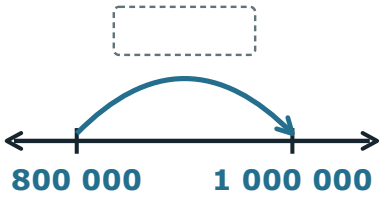
**Max and Teddy's stop · Paris · the Eiffel Tower.** On the sunny lawn under the Eiffel Tower in Paris, Max opens his guidebook while Teddy rolls in the daisies with all four paws in the air.

**Today:** Read, write and build numbers up to **1 000 000**: every place is worth **ten times** the place to its right.

## Warm-up Up to one million

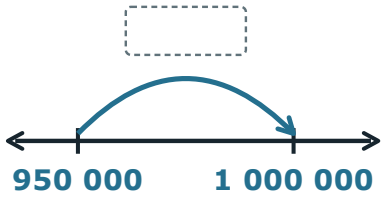
Each answer helps with the next one. Fill in the model, then write the equation.

**1** **a)** 800 000 + ___ = 1 000 000



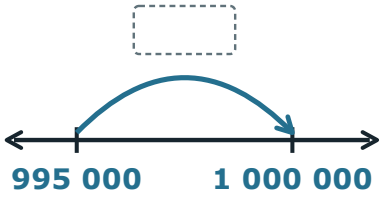

1 000 000 = 800 000 + _____

**b)** 950 000 + ___ = 1 000 000



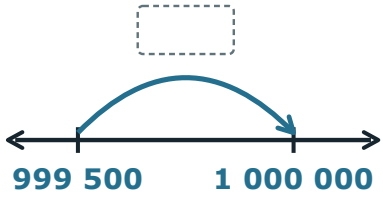

1 000 000 = 950 000 + _____

**c)** 995 000 + ___ = 1 000 000



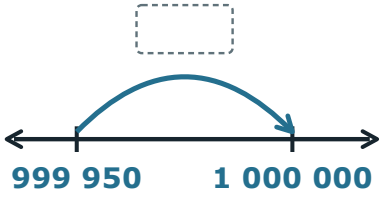

1 000 000 = 995 000 + _____

**d)** 999 500 + ___ = 1 000 000



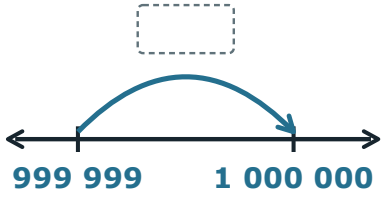

1 000 000 = 999 500 + _____

**e)** 999 950 + ___ = 1 000 000




1 000 000 = 999 950 + _____

**f)** 999 999 + ___ = 1 000 000




1 000 000 = 999 999 + _____

## KNOWLEDGE Six places on the chart

**WORKED EXAMPLE** **What number is shown in the place-value chart?**

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| ○○ | ○○<br>○○ | | ○○<br>○○<br>○ | ○ | ○○<br>○ |
| 2 | 4 | 0 | 5 | 1 | 3 |

**the number is 240 513**

1. There are no counters in the thousands. A **0** holds that place.
2. 2 hundred-thousands, 4 ten-thousands, 0 thousands, 5 hundreds, 1 ten and 3 ones: **240 513**.

**200 000 + 40 000 + 500 + 10 + 3 = 240 513**

**2** ★ **What number is shown in the place-value chart?**

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| ○ | ○○ ○ | ○○ | | ○○ ○○ | ○○ ○○ ○○ |
| 1 | 3 | | | 4 | 6 |

100 000 + 30 000 + 2 000 + 40 + 6 = _____

**3** ★ The chart shows **214 352**. Mathilde adds 3 counters to the ten-thousands column. **What is the number now?**

| | HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|---|
| | ○○ | ○ | ○○ ○○ | ○○ ○ | ○○ ○○ ○ | ○○ |
| now | 2 | | 4 | 3 | 5 | 2 |

214 352 + 30 000 = _____

**4** ★ What is the value of the **7** in **472 158**?

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| 4 | 7 | 2 | 1 | 5 | 8 |

the 7 is worth ☐

7 ten-thousands = _____

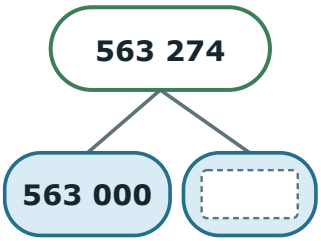
**5** ★ Mathilde lays four place-value cards on top of each other: **500 000** **20 000** **700** **9**. **What number do the cards make?**

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| | | | | | |

500 000 + 20 000 + 700 + 9 = _____

**6** ★ Fill in the model, then write the equation.

**a)** Complete the part-whole model.




563 274 = 563 000 + _____

**b)** 10 × 100 000

| | M | HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|---|---|
| 1 group | | 1 | 0 | 0 | 0 | 0 | 0 |
| 10 groups | | | | | | | |

10 × 100 000 = _____

**7** ★ Draw counters on the chart to show **231 042**. **How many counters go in each column?**

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

231 042 = _____ HTh + _____ TTh + _____ Th + _____ T + _____ O

**8** ★ Write **five hundred and eight thousand three hundred and forty** in numerals.

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| | | | | | |

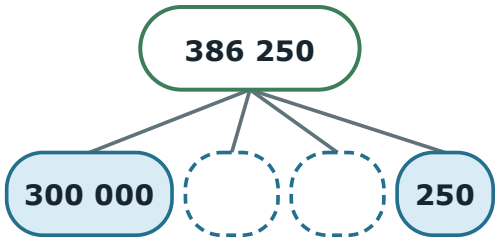
_____ + _____ = _____

**9** ★ Write **320 000** in words.

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| 3 | 2 | 0 | 0 | 0 | 0 |

320 000 = _____

**10** ★ Complete the number sentence. Each missing part is the value of one digit.




386 250 = 300 000 + _____ + _____ + 250

**11** ★ What is **100 000 less** than **574 308**?

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| 5 | 7 | 4 | 3 | 0 | 8 |

574 308 − 100 000 = _____

**12** ★ Mathilde shows Max three lift tickets. **Find the ticket number that has a 6 in the ten-thousands column.** Then write what that 6 is worth.

in _____: 6 ten-thousands = _____

| | HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|---|
| ticket 1 | 1 | 8 | 6 | 4 | 0 | 2 |
| ticket 2 | 6 | 1 | 5 | 3 | 9 | 0 |
| ticket 3 | 3 | 6 | 2 | 5 | 1 | 8 |

**13** ★ What number is **10 times the size** of **60 000**?

| | HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|---|
| 1 group | | 6 | 0 | 0 | 0 | 0 |
| 10 groups | | | | | | |

10 × 60 000 = _____

# Numbers to 1 000 000

**14** ★

The parts are not in order:
**400 + 70 000 + 3 + 600 000 + 8 000. Write the number.**

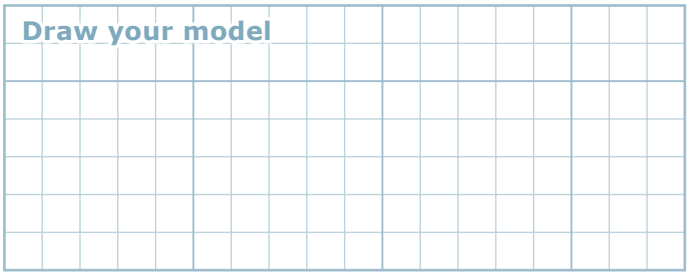
| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| | | | | | |

400 + 70 000 + 3 + 600 000 + 8 000 = _____

**15** ★

Partition **340 605** in a part-whole model: one part for every digit that is not 0. Start with the biggest part.

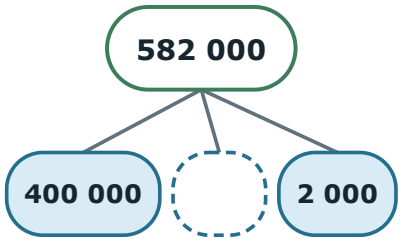
Draw your model



340 605 = _____ + _____ + _____ + _____

**16** ★

Complete the part-whole model.




582 000 = 400 000 + _____ + 2 000

APPLICATION **On the lawn under the tower**

Draw your own model, then write your number sentence.

**17** ★★

Mathilde has seven digit cards: 0 4 4 6 6 8 9, and Teddy sniffs at them on the grass. She uses six of them to make the number of Max's lift ticket. Her clues: the ten-thousands and hundreds digits are the same; the hundred-thousands digit is double the tens digit; the number has six digits; it is less than eight hundred and sixty-five thousand. **What could the ticket number be?**

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| | | | | | |

_____ < 865 000

**18** ★★

Teddy fetches a lost lift ticket. Mathilde's clues to its 6-digit number: no thousands and no tens; the ten-thousands digit is the second multiple of 4; the hundreds digit is 1 less than it; the ones digit is the first odd number after 1; the hundred-thousands digit is double the ones digit. **What is the number?**

**Write the ticket number in words.**

| HTh | TTh | Th | H | T | O |
|---|---|---|---|---|---|
| | | | | | |

the ticket number is _____

in words: _____

# Numbers to 1 000 000

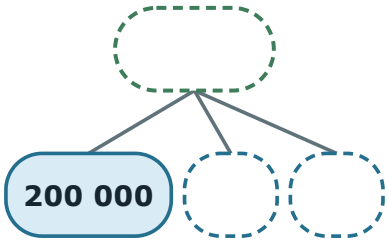
**19** ★★ Max has **R486 250** in the travel fund. He pays **R100 000** for the trains of France, Spain and Portugal, and **R1 000** for a lift ride up the tower and a picnic on the lawn with Teddy. **How much is left in the fund?**

Draw your model

_____ = R _____

**20** ★★ Max's blue watch counts his steps, and Teddy has trotted beside him for every one of them. Since Ireland the watch has counted **2 hundred-thousands, 46 thousands and 23 tens** of steps. **How many steps is that?**

200 000 + _____ + _____ = _____ steps

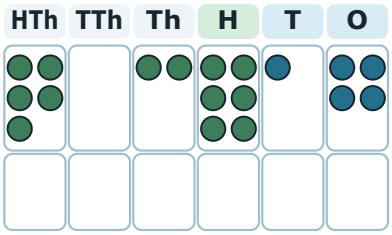



REASONING **Every place counts** Decide, then explain how you know.

**21** ★★★ **a)** Mathilde lays counters on Max's chart: 5 hundred-thousands, no ten-thousands, 2 thousands, 6 hundreds, 1 ten and 4 ones. Max says: "The number is 52 614." **What mistake has Max made?**

- ◯ He read one digit too many
- ◯ There is no mistake: 52 614 is right
- ◯ He did not write a 0 to hold the empty ten-thousands place

**b)** So **write the number the chart shows.**



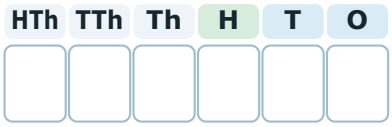

_____ = _____

Explain: _____

**22** ★★★ **a)** Max reads out a number from the guidebook: **four hundred and seven thousand and sixty**. Mathilde writes 40 760. Max writes 407 060. **Who is right?**

- ◯ Mathilde: a 4, a 7 and then 60
- ◯ Max: 407 thousands, then no hundreds and 60
- ◯ Both: the two numbers are the same

**b)** Now Mathilde reads out **four hundred and seventy thousand and six**. **Write it in numerals.**




_____ + 6 = _____

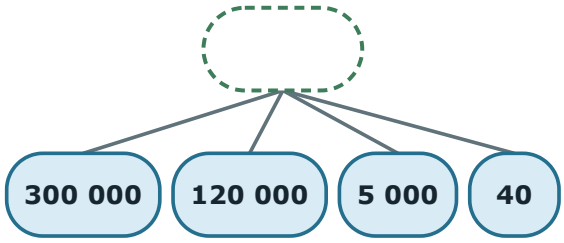
Explain: _____

**23** ★★★

**a)** Max says: "My number is **300 000 + 120 000 + 5 000 + 40**." Mathilde says: "My number has **4 hundred-thousands, 2 ten-thousands, 5 thousands and 4 tens**." Max and Mathilde are describing the same number. **True or false?**

◯ True ◯ False

**b)** So **complete the part-whole model**: what is **300 000 + 120 000 + 5 000 + 40**?




300 000 + 120 000 + 5 000 + 40 = _____

Explain: _____

**24** ★★★

**a)** Max writes **440 000** in the journal. Max says: "The two 4s are worth the same." Mathilde says: "The first 4 is worth ten times the second 4." **Who is right?**

◯ Max: they are the same digit

◯ Mathilde: one place to the left is worth ten times as much

◯ Neither: the first 4 is worth a hundred times the second

Explain: _____

**b)** So **what is each 4 worth?**

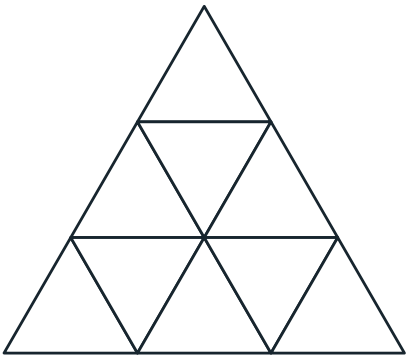
Draw your model

440 000 = _____ + _____

**25** PROBLEM OF THE DAY **How many triangles?**

Under the Eiffel Tower in Paris, Max looks up at the iron lattice of the tower: it is full of triangles. While Teddy rolls in the daisies, Max draws a big triangle made of small triangles in the journal, 3 along each side.

**How many triangles of all sizes are there, pointing up or pointing down?**



**Think further:** Predict the number for a triangle with one more row, then check.

**Explain one thing you learned.**

**I can do this:** ◯ independently ◯ with help ◯ I need more practice