2. Number Work

Three-digit numbers : Revision

◆ Solve the following examples.

1. Using any of these number cards make ten three-digit numbers and read them. (Remember that you cannot have zero in the hundreds place.)

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

2. Write the following numbers in words.
   (1) 325 (2) 549 (3) 667 (4) 782 (5) 890 (6) 401

3. Write the following numbers in figures.
   (1) Hundred and two
   (2) Three hundred and twenty
   (3) Five hundred and sixty-seven
   (4) Four hundred and forty-five
   (5) Nine hundred and ninety-nine
   (6) Seven hundred and fifty-six

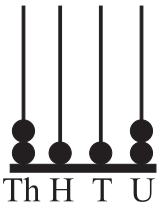
4. Write the next three numbers.
   (1) 399, ☐, ☐, ☐
   (2) 200, ☐, ☐, ☐
   (3) 597, ☐, ☐, ☐

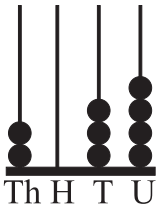
5. Write the three previous numbers.
   (1) ☐, ☐, ☐, 600
   (2) ☐, ☐, ☐, 369
   (3) ☐, ☐, ☐, 299

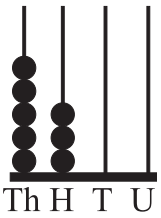
Four-digit numbers

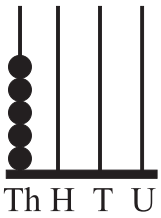
Symbols	Numbers	Read as
	1000	One thousand
	4000	Four thousand
	2012	Two thousand and twelve
	2203	Two thousand two hundred and three
	1010	One thousand and ten
	1001	One thousand and one
	2314	Two thousand three hundred and fourteen

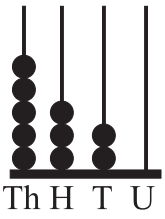
◆ **Look at the symbols. Write the number and read it.**

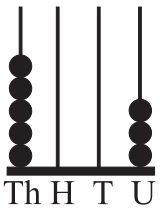
(1) 

(2) 

(3) 

(4) 

(5) 

(6) 

Numbers in words and figures

1. Four thousand and twenty-eight : 4028

Write 4 in the thousands place. Now, we must write the digits in the hundreds, tens and units places, too. The given number has no hundreds. So, we write a zero in the hundreds place. Twenty-eight has 2 tens and 8 units. So we write 2 in the tens place and 8 in the units place.

2. Five thousand three hundred and nine : 5309

In this number, there is 5 in the thousands place and 3 in the hundreds place. There are no tens, so we write 0 in the tens place. We write 9 in the units place.

When writing a four-digit number in figures, we first write the digit in the thousands place. Then, we write the proper digit from 0 to 9 in the hundreds, tens and units places in that order.

Exercise

1. Write the given numbers in figures.

Number in words	Th	H	T	U
(1) Four thousand and five				
(2) Five thousand and seventeen				
(3) Seven thousand three hundred and thirteen				
(4) Eight thousand				
(5) Nine thousand nine hundred and ninety-nine				

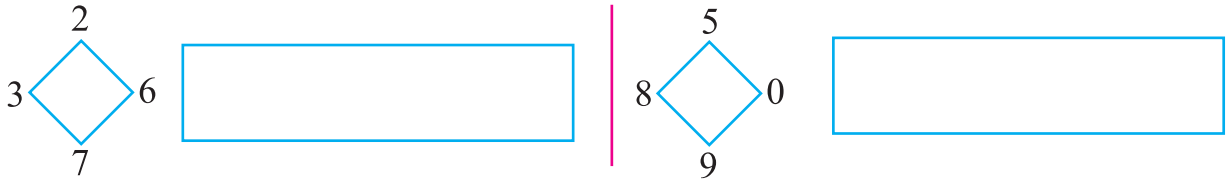
2. Read the numbers.

1001	2002	4004	5051	3067	7038	9000
1010	2020	4040	5105	3607	7308	9009
1100	2200	4400	5150	3670	7083	9090
			5501	3076	7830	9900

3. Read the given numbers. Write them in words.

1235	2341	3507	4115	5045	6787	7890	8888	9007

4. Using each digit only once, write five four-digit numbers and read them.



5. On a number slate, write different four-digit numbers by changing, one at a time, digits in different places. Read each number.

Th	H	T	U
3	0	2	5

Th	H	T	U
1	4	2	6

Introducing five-digit numbers

Reshma : Which is the biggest four-digit number?

Sachin : Nine thousand, nine hundred and ninety-nine!

Nargis : Which is the next number?

Tai : Let's work that out. When we add 1 to a number, we get the next number. You remember that, don't you? Now, we'll do the addition 9999 + 1 in vertical arrangement.

TTh	Th	H	T	U
	1	1	1	
	9	9	9	9
+				1
1	0	0	0	0

9 units and 1 unit make 10 units. That gives 1 ten to carry over. Write that in the tens place.

9T + 1T make 10 tens. That gives 1 hundred to carry over. Write that in the hundreds place.

9H + 1H make 10 hundreds. 10 hundreds is 1 thousand. Write that 1 thousand in the thousands place.

We get 9 + 1 = 10 in the thousands place. So, this number is ten thousand. We make a new ten thousands place for it on the left of the thousands place. We call it the 'TTh' place.

Reading and writing five-digit numbers

◆ **Look at the five-digit number below.**

TTh	Th	H	T	U
1	3	5	7	8

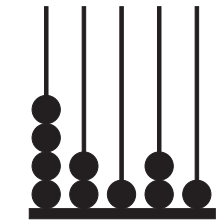
This number can be read as one ten thousand, three thousand, five hundred and seventy-eight.
But to make it easier we read it as thirteen thousand, five hundred and seventy-eight.
That is, we read the digits in the ten thousands and thousands places together.

◆ **Read the following numbers and write them in words.**

20,000 = Twenty thousand 68,000 = ... 79,000 = ...
80,000 = ... 54,000 = ... 99,000 = ...

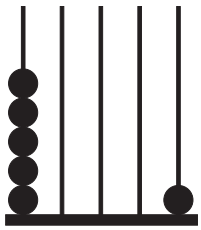
◆ **Look at the symbols and read the number they make.**

(1)



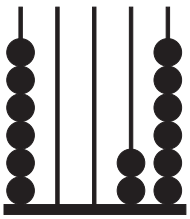
42,121 = Forty-two thousand, one hundred and twenty-one

(2)



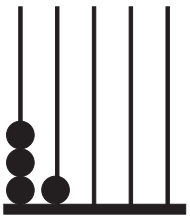
50,001 = Fifty thousand and one

(3)



60,026 = ...

(4)



31,000 = ...

Numbers in words and figures

1. Sixty-two thousand thirty seven : 62,037

62Th = 60 Th + 2 Th. It means that here we have 6 ten thousands and two thousands. This number has no hundreds. So we write 0 in the hundreds place.

2. Seventy thousand two hundred and six : 70,206

70 thousand is 7 ten thousands. There are no more thousands in this number. There are no tens, either. So we write 0 in the thousands and tens places.

3. Thirty thousand and one : 30,001

Here, 30 thousand is 3 ten thousands. Besides these, there are no thousands or hundreds or tens in this number. So we write 0 in all those places.

Exercise

1. Read the numbers, write them in figures.
   (1) Forty thousand
   (2) Fifty thousand fifty
   (3) Twelve thousand, three hundred and thirteen
   (4) Forty-five thousand and three
   (5) Twenty-three thousand, one hundred and five
   (6) Sixty-eight thousand and five

2. Read the numbers, write them in words.
   (1) 52,045 (2) 23,409 (3) 45,600
   (4) 41,000 (5) 99,999 (6) 95,768

3.

TTh	Th	H	T	U
2	3	4	1	1

On the number slate alongside, write five numbers by changing the digits in the units, tens, hundreds, thousands and ten thousands places, one at a time. Read the numbers.

4. Using each of the digits 9, 5, 6, 1, 8 only once, write six five-digit numbers.
5. Write the biggest number that can be made using the digits 1, 5, 6, 4, 7 .
6. Write two numbers by writing the digits 4, 3, 9, 8, 7 in the ascending and descending order.
7. Keeping 7 in the units place, use all the digits 6, 0, 7, 5, 4 to make five numbers. Write the numbers.
8. Write five numbers, keeping the smallest of 4, 9, 3, 5, 1 in the units place.

The expanded form of a number

Hamid : Could we write the number 5,324 as an addition or in the expanded form?

Tai : We have learnt to write the expanded form of a three-digit number. Let's write the expanded form of a four- or five-digit number in the same way.

Sharad : 5,324 means 5 thousands, three hundreds, 2 tens and 4 units.

Mary : It means that the expanded form of 5,324 is 5000 + 300 + 20 + 4.

Tai : Now, write the expanded form of the five-digit number 23,375.

Sharad : 23,375 means 2 TTh, 3 Th, 3 H, 7 T and 5 U. The expanded form is 23,375 = 20,000 + 3000 + 300 + 70 + 5.

Exercise

1. Write the following numbers in the expanded form.
   (1) 7,545 (2) 4,050 (3) 65,100 (4) 8,000 (5) 12,745
   (6) 78,999 (7) 9,392 (8) 50,105 (9) 70,495 (10) 82,727

2. Write the numbers from their expanded form.

(1) 3,000 + 200 + 50 + 7 = 3257 (2) 10,000 + 5,000 + 1 = ☐

(3) 4000 + 500 + 10 + 3 = ☐ (4) 20,000 + 300 + 40 + 5 = ☐

(5) 7,000 + 80 + 3 = ☐ (6) 90,000 + 90 + 2 = ☐

3. Some digits and their places in the number are given below. Write down the numbers they make.

For example, 5 TTh, 2Th, 3H, 2T, 1U = 52,321 ; 9H, 8TTh, 5U = 80905

(1) 7 U, 2 T, 5 TTh, 9 Th (2) 3 H, 4 Th, 5 T, 1 TTh

(3) 5 T, 8 Th, 7 TTh (4) 5 Th, 7 TTh, 3 H, 2 T, 4 U

Place value

Tai : Let's play a game. I'll say a number. You give the expanded form of that number. The number is : 55,555.

Dhruv : 50,000 + 5000 + 500 + 50 + 5

Priyanka : That's funny ! There's 5 in every place in the number. But its value is different in each place.

Tai : The place of a digit determines the value of the digit.
Tell me the place value of each of the digits in the number 37842.

Dhruv : Let me tell. 3TTh is 3 ten thousands which is 30,000, 7 Th is 7000, 8H is 800, 4T is 40, 2U is 2.

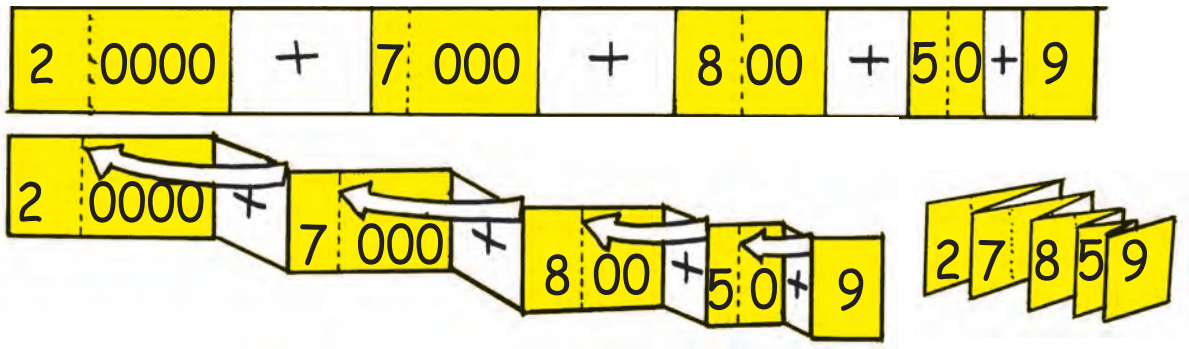
Exercise

Write the place value of the underlined digit in the following numbers.

(1) 1,9<u>9</u>9 (2) <u>2</u>,345 (3) 2,00<u>0</u> (4) 4,<u>8</u>35

(5) 3,74<u>9</u> (6) 2<u>7</u>,859 (7) 67,<u>7</u>77 (8) <u>5</u>6,708 (9) 3<u>0</u>,050

The expanded form of a number on a folding strip



✍ **Remember :** When reading a number, the digits are read in the descending order of their place value. So we start with the digit of the greatest place value.

The different breakups of a number

Tai : We write the number 'one hundred and twenty-five' as 125, in figures. That is, 125 is a sign or symbol used for the number 'one hundred and twenty-five'. But we can break up this number in different ways.

Gouri : Different ways? How?

Tai : Now, Gouri, suppose you have to give your friend 125 rupees and all you have is a whole lot of one-rupee coins. How will you do it?

Gouri : I'll give her 125 one-rupee coins.

Tai : So, the number 125 means 125 units.

Sudhir, suppose you have several 10-rupee notes and some 1-rupee coins. You have to give ₹125. How will you do it?

Sudhir : I will give 12 ten-rupee notes and 5 one-rupee coins. So, according to the notes and coins I give, 125 means 12 tens and 5 units.

Tai : That's right. Ajit, suppose you have 100-rupee notes, 10-rupee notes and 1-rupee coins. You, too, have to give ₹125. How will you do it?

Ajit : I shall give one 100-rupee note, two 10-rupee notes and five 1-rupee coins. Here, 125 means 1 hundred, 2 tens and 5 units.

Tai : So, the number 125 can have three different breakups.
125 = one hundred and twenty-five units
125 = twelve tens, five units
125 = one hundred, two tens, five units

Now can you tell the different breakups of the number 4083?

Sudhir : One of the breakups is 'four thousands and eighty-three units.'

Ajit : Another breakup is '408 tens and 3 units.'

Mallika : Still another breakup is 'forty hundreds, eight tens and three units.'

Gouri : And yet another way is 'four thousands, zero hundreds, eight tens and three units.'

Tai : Thus we can have several different breakups of the same number.

Exercise

Work out and write different breakups of the numbers given below.

(1) 679 (2) 863 (3) 6745 (4) 9856 (5) 1027

The numbers just before and after a given number

Mary : Nandu, can you tell the number just after 120?
Nandu : 121.
Mary : Now tell the number just after1999.
Nandu : I can't tell.
Tai : Remember, the number just after any number is greater by 1 and the number just before it is smaller by 1.
Nandu : Yes. So, if I add 1 to 1999 I will get the next number 1999 + 1 = 2000. Also, the number just before 1999 is 1998.

Exercise

Write the number just after and the number just before the given number.

Number	The number just before	The number just after	Number	The number just before	The number just after
2999			1000		
3800			3459		
7798			5009		

Comparing numbers

Tai : What do you remember about comparing numbers ?
Nandu : Any three-digit number is bigger than any two-digit number.
Priya : And if both numbers have three digits, then the one with the bigger hundreds digit is the bigger number.
Tai : So now, how will we compare numbers having up to four digits ?
Priya : Any three-digit number will be smaller than any four-digit number !
Nandu : If both numbers have four digits, the number with the bigger thousands digit will be the bigger number. If the thousands digits are equal, we'll compare the hundreds digits. If those are also equal, look at the tens digits to determine the smaller and bigger number. For example, 4567 > 4325.

Exercise

Complete the following table.

Numbers	Smaller	Bigger	Numbers	Smaller	Bigger
2123, 1968			9999, 999		
2342, 2432			6070, 8079		
9542, 9549			5978, 7539		

Ascending and descending order

Cupboards of several different companies are on sale in a shop. The price of one is ₹4,750 while that of another is ₹6,200 and of a third, ₹3,980.

The price of the costliest cupboard : ₹6200

The price of the cheapest cupboard : ₹3980

The prices in ascending order : 3980 < 4750 < 6200

The prices in descending order : 6200 > 4750 > 3980

Write the numbers 2980, 3000, 5125 in ascending and descending order.

Ascending order : 2980 < 3000 < 5125 Descending order : 5125 > 3000 > 2980

Exercise

Write the numbers in ascending and descending order.

(1) 2345, 2349, 2347 (2) 6000, 5070, 3007 (3) 5007, 2007, 3007

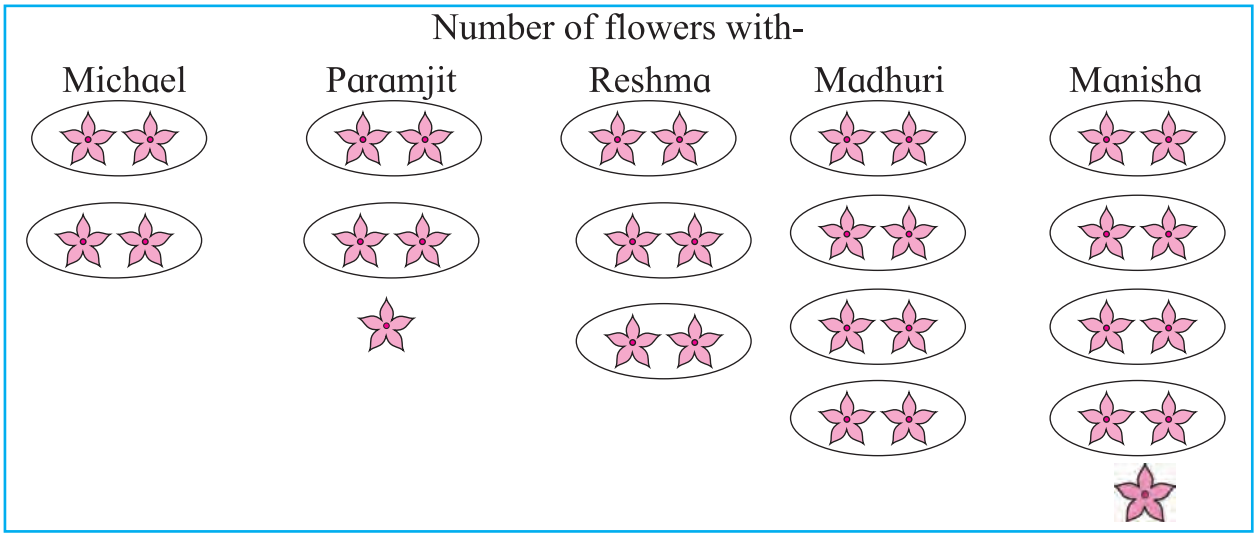
(4) 1009, 1900, 1090 (5) 4180, 6180, 7180 (6) 2917, 3456, 1357

Even and odd numbers

Tai : Michael, you take 4 flowers, Paramjit 5, Reshma 6, Madhuri 8 and Manisha 9. Now, put the flowers in twos. Make the pairs and also tell how many are left over.

Michael : I made two pairs from my four flowers and I have no flowers left.

Paramjit: I also made two pairs with my five flowers but I have one flower left.



Tai : Now, let's see. Who had no flowers left? We shall put all your numbers into one group. Who had one flower left? We put yours into another group.

Numbers from which no flower was left over 4, 6, 8

Numbers from which one flower was left over 5, 9

Tai : Look carefully at the numbers in the two groups. What difference do you notice in them?

Reshma : If we divide 4, 6, 8 by 2, there is no remainder. But, when we divide 5 or 9 by 2, the remainder is 1.

Tai : The numbers which leave no remainder when we divide them by 2 are called even numbers. 4, 6 and 8 are even numbers.
Numbers that leave a remainder of 1 when divided by two are called odd numbers. 5 and 9 are odd numbers.

◆ **Take as many objects (stones, beads, etc.) as each of the following given numbers in turn. By putting the objects in twos, decide whether the number is even or odd.**
12, 11, 10, 23, 27, 34, 25, 36, 39, 41, 45, 52, 16, 17, 19, 28

- Write down the digits in the units place of the even numbers.
- Write down the digits in the units place of the odd numbers.

◆ **Digits in the units place of even and odd numbers**
Digits in the units place of even numbers : 0, 2, 4, 6 or 8.
Digits in the units place of odd numbers : 1, 3, 5, 7 or 9.

◆ **See the digits in the units place and say whether the number is even or odd.**
35, 67, 32, 30, 43, 34, 51, 56, 88, 79

International numerals

Suresh : Hey, Vijaya, have you noticed? All the numbers printed on our currency notes are in English.

Vijaya : Yes, that's true! What did you think they would be?

Suresh : Well, I thought, in Maharashtra, they would be in Marathi. Come let's ask Tai about this. Tai, why are all the numbers printed on our currency notes in English and not in Marathi?

Vijaya : And mostly all the numbers on our vehicles, too?

Tai : Very good! Excellent observation! Now tell me, have any of you travelled outside Maharashtra?

Vijaya : Yes, Tai, we have been to Karnataka.

Tai : Could you read the names of shops on their sign boards?

Vijaya : No, I couldn't.

Tai : That's because they write letters using a different script.
Their numerals are also different from ours.

Suresh : How do they write them?

Tai : In Marathi we write १, २, ३, ...१०. This is how they write : ० ७ ३ ४ ५ ६ २ ८ ९ ००. So, if we had १, २, ३ on our currency notes, how would they read them?

Vijaya : And if the numerals were like theirs, we wouldn't be able to read them!

Tai : That's right. It means that the numbers on currency notes should be such that everyone in India can read them. And, not only Indians, but visitors from other countries should also be able to read them.

Suresh : Yes, I agree. Because, if I had to go to another country, I would like to be able to read the numbers on their notes.

Tai : Well said! That's why all the countries of the world have agreed that numbers that tell the values of currency notes or their serial numbers should all be printed in English. So also other numbers such as the serial numbers of train tickets or bus and airline tickets.

Vijaya : Now I understand! That must be the reason why all over our country too, bus and rickshaw numbers are written in English.

Tai : When numbers are written using English numerals, everyone in the world can understand them. That is why these numerals are now called 'international numerals'. You are already familiar with them.

Devanagari numerals	०	१	२	३	४	५	६	७	८	९
International numerals	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**

Devanagari numerals	४९७	२३५	४३७	५६८	६७२	७९९	८००	९१२
International numerals	**497**	**235**	**437**	**568**	**672**	**799**	**800**	**912**

Reading numbers and writing them in words

4536 is read as, 'Four thousand, five hundred and thirty-six'.
27,105 is read as, 'Twenty-seven thousand, one hundred and five'.
64,089 is read as, 'Sixty-four thousand and eighty-nine'.

Exercise

1. Read the numbers given below and write them in words.
   (1) 20,504 (2) 97,487 (3) 30,008 (4) 4,879 (5) 6,405 (6) 893
2. Where have you seen international numerals being used ?
3. Find prices of things written in Devanagari numerals and read them.