Chapter

1 Numbers up to 10,000

New topic alert!
How do you feel?


Excited


Nervous

Look!

Pascal, Johan, Indy, and Robin are participants in a running event. They are given different numbers on their running jerseys. What number is on Robin's T-shirt?

Learning Objectives

- Read, write, and compare numbers up to 10,000
- Identify place value, successor, predecessor, and even or odd numbers

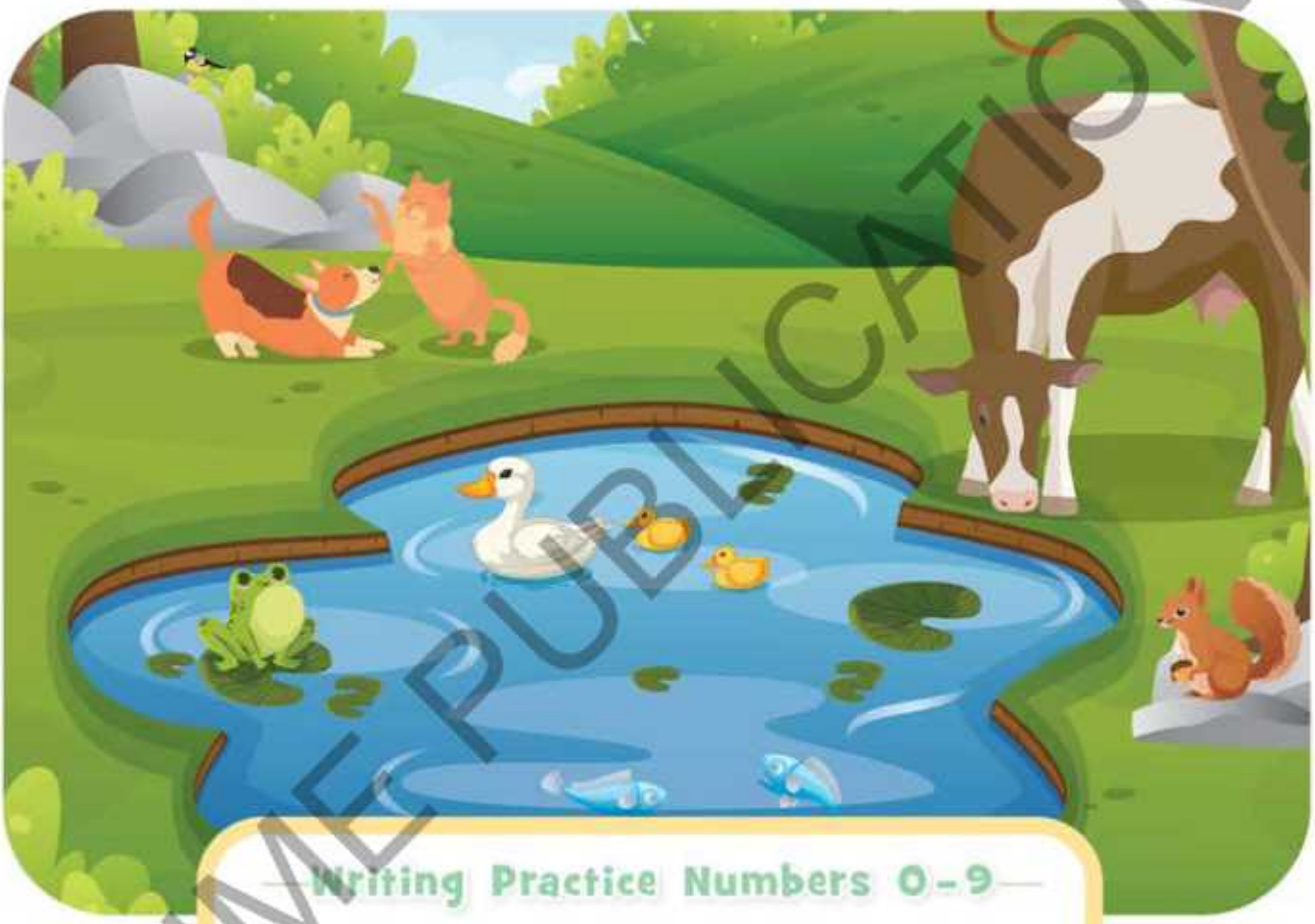
Maths Lingo

- Abacus
- Comparison
- Building numbers

Warm Up

Remembered Perception

Using the ten digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9, we have learnt to write numbers with one digit, two digits, and three digits using three places – ones, tens, and hundreds.



Writing Practice Numbers 0–9

0 1 2 3 4

5 6 7 8 9

Exercise 1A

The children are playing a number game. Some are writing numbers on their notepads, and some are painting numbers on their canvas.

Observe the information above and answer the following questions.

1. Write the number names of the numbers written by Mika and Robin.

   _____

   _____

2. Write the expanded form of Pascal's number. _____
3. The place value of 7 in Johan's number is _____
4. How many children wrote a number greater than 400? _____
5. Whose number is the successor of 200? _____
6. Arrange the numbers written by the 5 children in ascending order _____, _____, _____, _____, _____.

Spotlight!

Numbers Beyond 999

Scan Me!

The greatest 1-digit number is 9.

Adding 1 to 9 gives 10. 10 is the smallest 2-digit number.

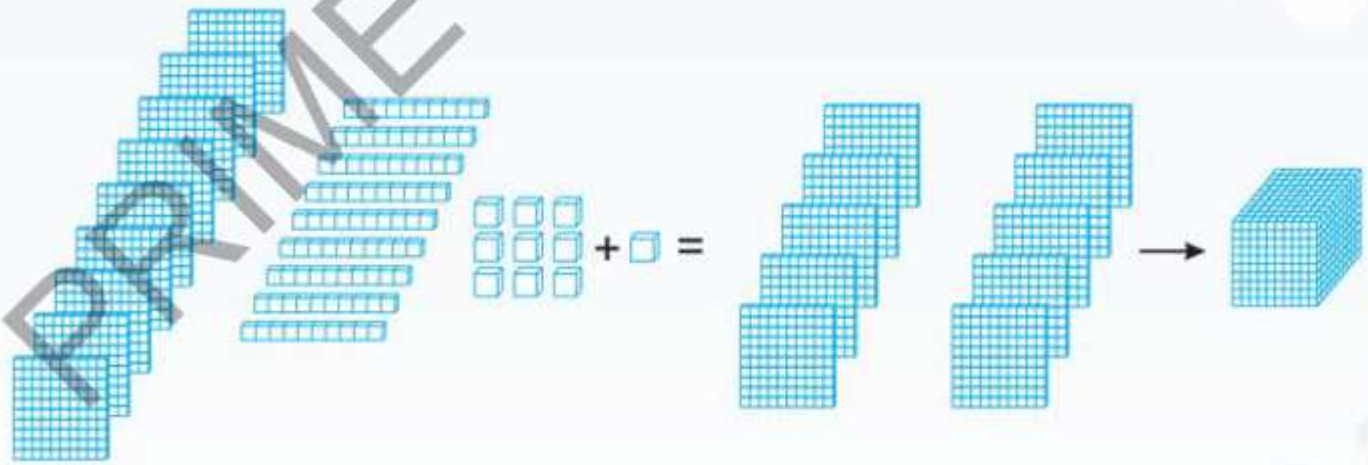
The greatest 2-digit number is 99.

Also, adding 1 to 99 gives 100. 100 is the smallest 3-digit number.

The greatest 3-digit number is 999.

Adding 1 to 999 gives 1,000. We read 1,000 as one thousand.

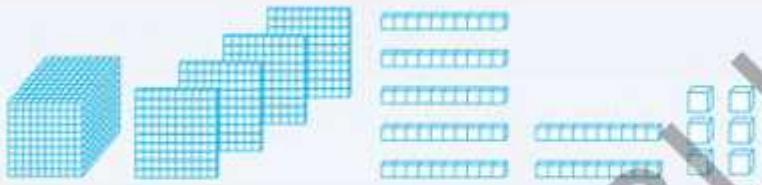
1,000 is the smallest 4-digit number. In a 4-digit number, the fourth digit from the right is in the thousands place.



Adding 1 to 1,000 gives 1,001. We read 1,001 as one thousand one.
Similarly, we read:

1,009 as one thousand and nine.
1,035 as one thousand and thirty-five.
4,240 as four thousand two hundred and forty.
9,899 as nine thousand eight hundred and ninety-nine.

The 4-digit numbers continue in this way untill we reach 9,999.
9,999 is the greatest 4-digit number.

Number Representation	Number	Number Name
	1,476	One thousand four hundred and seventy-six
	2,860	Two thousand eight hundred and sixty
	5,306	Five thousand three hundred and six
	6,999	Six thousand nine hundred and ninety-nine

Spotlight!

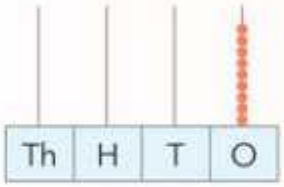
4-Digit Numbers on a Spike Abacus

In class 3, you learn how to represent 3-digit numbers on an abacus.
Now you will learn to represent 4-digit numbers on an abacus.

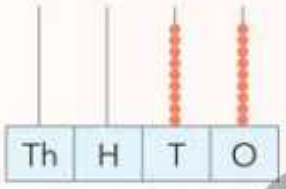
Remember!

An abacus is a tool for counting.

On the abacus, the numbers 9, 99, and 999 are shown below.



9



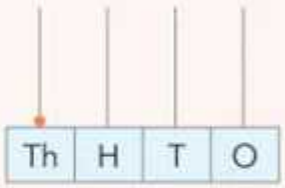
90 + 9 = 99

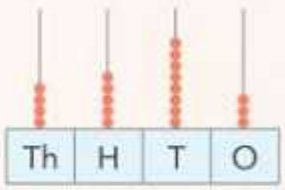
900 + 90 + 9 = 999

1,000 = 1 thousand + 0 hundreds + 0 tens + 0 ones
= 1,000 + 0 + 0 + 0

So, we put only 1 bead on the thousands rod. Similarly,

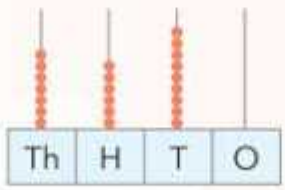
4,583 = 4 thousands + 5 hundreds + 8 tens + 3 ones
= 4,000 + 500 + 80 + 3



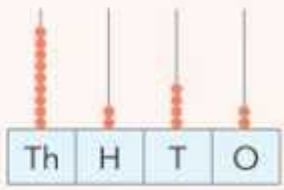


We put 4 beads on the thousands rod, 5 beads on the hundred rods, 8 beads on the tens rod and 3 beads on the ones rod.

4,000 + 2 + 0 + 1
= 4,201



7,000 + 600 + 90 + 0
= 7,690

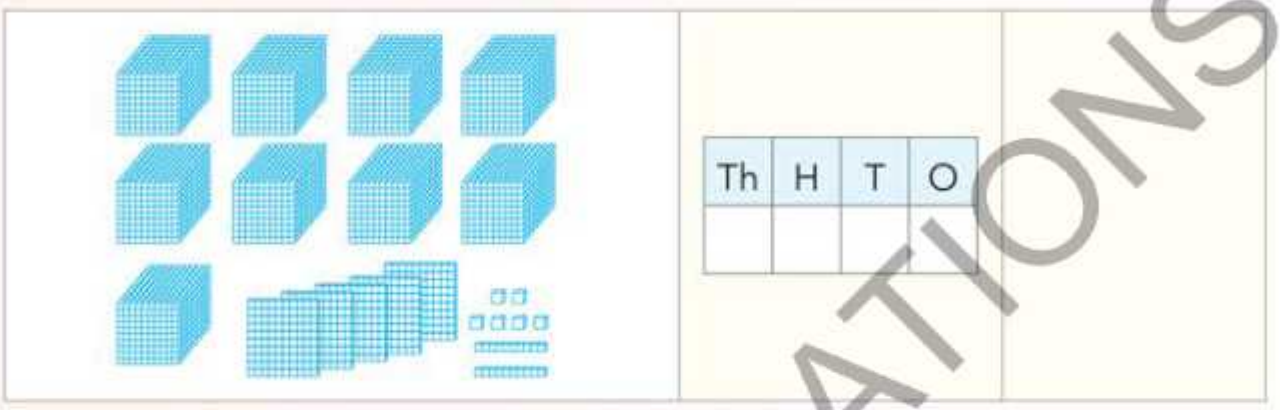


9,000 + 200 + 40 + 2
= 9,242

Th stands for Thousands, H stands for Hundreds, T stands for Tens, and O stands for Ones.

Exercise 1B

1. Write the number and the number name.



2. Write the numbers for the following number names.

a. Four thousands two hundreds and forty-six _____

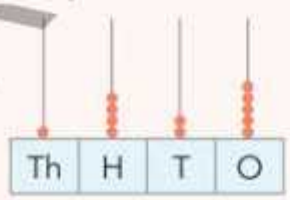
b. Seven thousands nine hundreds and two _____

3. Match the number names with the corresponding numbers.

a. Eight thousands four hundreds and ninety-six	•	• 6,050
b. Six thousands and fifty	•	• 1,234
c. One thousand two hundreds and thirty-four	•	• 8,496

4. Read the spike abacus and write the corresponding number.

a.



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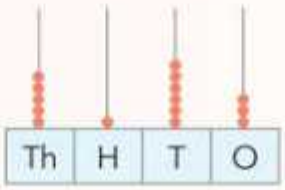
b.



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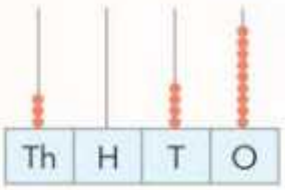
c.



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Spotlight!

Place Value of a Digit in a Number

Consider the number 4,726.

Remember!

Place value of 0 is always 0.

It is a 4-digit number.

4,726 = 4 thousands + 7 hundreds + 2 tens + 6 ones

= 4,000 + 700 + 20 + 6

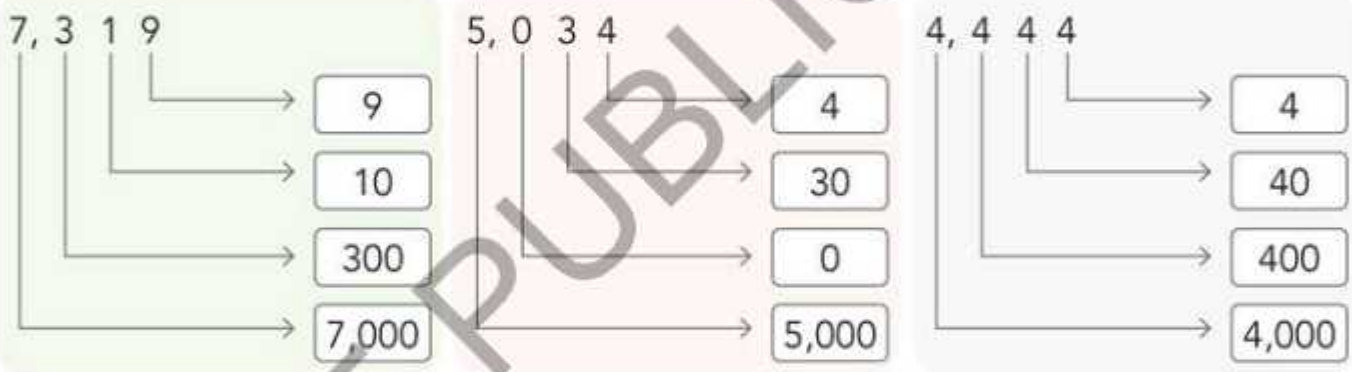
In 4,726, number 6 is in the ones place, so its place value is 6 ones or 6.

Number 2 is in the tens place, so its place value is 2 tens or 20.

Number 7 is in the hundreds place, so its place value is 7 hundreds or 700.

Number 4 is in the thousands place, so its place value is 4 thousands or 4,000.

Observe the place value of the digits in the following numbers.

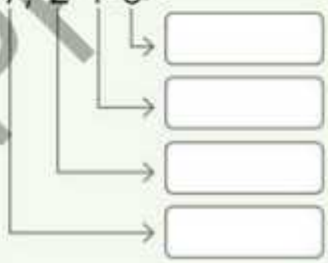


Exercise 1C

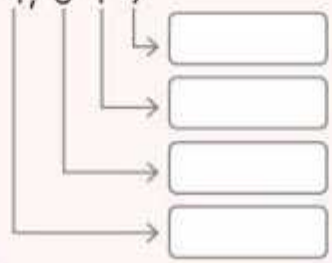
Scan Me!

Write the place value of the digits.

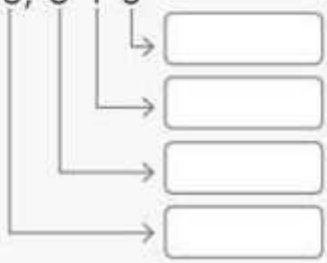
1. 7, 2 1 6



2. 4, 0 1 9



3. 8, 3 1 5



Spotlight!

Comparison of Numbers

Scan Me!

When the number of digits in the numbers is different.

In this case, we have the following rule.

The number with more digits is always greater.

Remember!

> means 'greater than'. < means 'less than'.

Compare 7,412 and 359.

7,412 is a 4-digit number and 359 is a 3-digit number.

Since 7,412 has more digits, it is greater than 359. We can also say that 359 is less than 7,412. In symbolic form, we write:

7,412 > 359 or 359 < 7,412

When the number of digits in both numbers is the same.

In this case, we proceed as follows.

Start by comparing the leftmost digits. If they are the same, compare the second digits from the left. If they are also the same, compare the third digits from the left. Continue until you find unequal digits in the corresponding places.

Compare 6,304 and 8,219.

6,304 and 8,219 are both 4-digit numbers.

6,3 0 4 — 8,2 1 9

Different

Since 6 is less than 8, we can say:

6,304 is less than 8,219, or, 8,219 is greater than 6,304.

In symbolic form, we write 6,304 < 8,219 or 8,219 > 6,304.

Compare 4,937 and 4,258.

4,937 and 4,258 are 4-digit numbers.

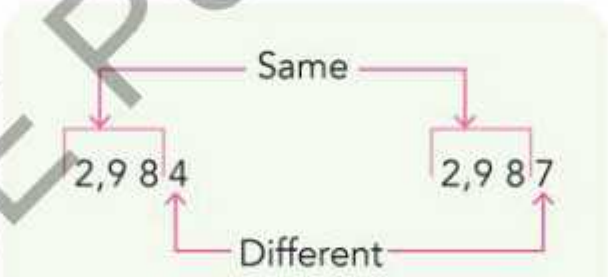
Since, 9 is greater than 2, we can say:

4,937 is greater than 4,258, or 4,258 is less than 4,937.

In symbolic form, we write 4,937 > 4,258 or 4,258 < 4,937.

Compare 2,984 and 2,987.

2,984 and 2,987 are 4-digit numbers.



Since, 4 is less than 7, we can say:

2,984 is less than 2,987, or 2,987 is greater than 2,984.

In symbolic form, we write 2,984 < 2,987 or 2,987 > 2,984.

Successor and Predecessor

Spotlight!

Scan Me!

The number that comes just after a given number is called its successor.

The successor of a number is found by adding 1 to it.

Number	Successor
109	110
347	348
899	900

Number	Successor
1,200	1,201
5,689	5,690
8,999	9,000

The number that comes just before a given number is called its predecessor.

The predecessor of a number is found by subtracting 1 from it.

Number	Predecessor
400	399
854	853
910	909

Number	Predecessor
3,218	3,217
6900	6,899
9,870	9,869

Exercise 1D

Circle the correct word.

1. 127 > 107 means, 127 is less/greater than 107.
2. 254 < 2,019 means, 254 is less/greater than 2,019.
3. 4,317 > 4,000 means, 4,317 is less/greater than 4,000.
4. 8,526 < 8,826 means, 8,526 is less/greater than 8,826.

Spotlight!

Building Numbers

Scan Me!

Consider the digits 3, 5, and 1.

Using each digits only once, we can make the following 3-digit numbers.

351, 315, 531, 513, 135, 153

Among these numbers, 531 is the greatest and 135 is the smallest.

We notice that in 531, the given digits are arranged in descending order.

In 135, the given digits are arranged in ascending order.

Thus,

To build the greatest number, arrange the digits in descending order.
To build the smallest number, arrange the digits in ascending order.

Now, can you build the greatest and the smallest 4-digit numbers using the digits 5, 2, 1, and 7?

Arranging the given digits in descending order, we get 7,521.

Arranging the given digits in ascending order, we get 1,257.

The greatest number is 7,521.

The smallest number is 1,257.

Spotlight!

When One of the Given Digits is 0

Consider the digits 5, 0, and 8.

We can arrange the given digits as follows: 508, 580, 805, 850, 058, 085.

Are 058 and 085 3-digit numbers? The answer is no.
058 is 58 and 085 is 85, since 0 at the beginning of a number has no value.

So, using the given digits, we can build the following 3-digits number only.

508, 580, 805, 850

Among these numbers, 850 is the greatest and 508 is the smallest.

So, if one of the given digits is 0, we do not place it in the leftmost position, instead, we place it in the second position from the left to get the smallest number.

Using the digits 5, 0, 2, and 8 only once, we can build the greatest and smallest 4-digit numbers as follows.

The greatest number is 8,520.

The smallest number is 2,058.

Exercise 1E

1. Write the following numbers in expanded form.

a.	2,698	
b.	3,467	

2. Build the smallest number using the following digits only once.

a. 2, 8, 5 _____ b. 1, 6, 3, 2 _____

3. Build the greatest number using the following digits only once.

a. 4, 3, 7 _____ b. 7, 2, 1 _____

Practice Makes Perfect

1. Write the numbers for the following number names.

a. Four thousands one hundred eight _____

b. Six thousands twenty-three _____

2. Write the expanded form of the following numbers.

a. 2,519 _____

b. 7,015 _____

3. Write the smallest and greatest 4-digit numbers using the digits 7, 0, 2, and 4 only once. _____

Pick the Right Answer

Intellectual Development

Tick (✓) the correct answer.

1. The place value of 7 in 7,329 is _____.

◯ 7,000 ◯ 3,000 ◯ 700 ◯ 7

2. The predecessor of 8,900 is _____.

◯ 7,900 ◯ 8,899 ◯ 8,800 ◯ 8,000

3. The smallest 4-digit number that can be formed using the digits 2, 7, 1, and 5 is _____.

◯ 1,275 ◯ 2,175 ◯ 1,725 ◯ 1,257

Thinking About Values

Responsible Decision Making

Mika's father bought an encyclopedia. It had three parts. The number of pages in these three parts were 1,476; 1,250; and 1,084 respectively. Mika handled these books carelessly, causing them to get damaged.

1. Write the number names for 1,476; 1,250; and 1,084.
2. Among these numbers, which is the smallest and which is the greatest?

Fun Time

Critical Thinking

Some candies were bought to be distributed among a group of children. When 2 candies were given to each child, one child received none. However, when 1 toffee was given to each child, one toffee was left over. How many candies and children were there?

Brainy Maths

Intellectual Development

Fill in the blanks.

1. Write the greatest 4-digit number. _____
2. Write the smallest 4-digit number. _____
3. Write the number name for the greatest 3-digit number. _____
4. 2,519 is less than 2,915. Write this fact using > or < . _____
5. Write the place value of tens in 4,526. _____
6. Write the number for nine thousands and nine. _____

7. Which is greater, 6,000 + 5 or 5,000 + 6? _____

8. Build the smallest 4-digit number using the digits 7, 0, 1, and 3 only once. _____.

Skill Builders

Critical Thinking

1. A scientist has discovered a secret code but needs your help to figure it out. The code is a four-digit number. Here are the clues.
   - The number is greater than 3,500 but less than 4,500.
   - The thousands digit is twice the tens digit.
   - The hundreds digit is the same as the ones digit.
   - The sum of the hundreds and tens digits is 3.

   What is the secret code?

   a. 3,121
   b. 4,121
   c. 3,221
   d. 4,112

2. A mailman is trying to find the house number for a delivery. Here are the clues to help him.
   - The number is a four-digit number between 6,000 and 7,000.
   - The sum of all the digits is 17.
   - The hundreds digit is 3 more than the tens digit.
   - The ones digit is 2.

   What is the house number?

   a. 6,432
   b. 6,742
   c. 6,524
   d. 6,362

Real-World Problem Solving

Application

During a classroom activity, the teacher asked the students to picked a number card from a pile. The number cards picked by the first four students are described as follows.

- The card picked by the first student is the greatest 2-digit number.
- The card picked by the second student is the smallest 4-digit number with all different digits.
- The card picked by the third student is the first even number.
- The card picked by the fourth student is the greatest 4-digit even number.

Observe the information above and cross (X) the correct answer.

1. What is the predecessor of the number picked by the second student?

   a. 1,034 c. 1,023

   b. 1,033 d. 1,022

2. Which student picked the card with the smallest number?

   a. The first student c. The second student

   b. The third student d. The fourth student

3. Name the number on the card picked by the fourth student.

   a. Nine thousands and ninety

   b. Nine thousands nine hundreds and ninety-eight

   c. Nine thousands and eighty-nine

   d. Nine thousands and ninety-nine

Activity Zone

Think Deep

Objective : Building 3-digit numbers.

Two students can play this game.

Preparation :
- Card or paper
- Pen or pencil
- Box

How to Play :
- Make 10 cards with the numbers 0, 1, 2, ..., 9.
- Put the cards in an empty box.

  0 1 2 3 4 5 6 7 8 9
- Each student takes turns to draw 3 cards from the box.
- Both the students draw 3 cards from the box by turn.
- The student with the greater number scores 1 point.
- Return the cards to the box, and continue playing.
- The first student to reach 5 points wins the game.
- For example:
  - Player 1 draws a 6.
  - Player 2 draws a 2.
  - Player 1 draws a 7.
  - Player 2 draws a 5.
  - Player 1 draws a 4.
  - Player 2 draws a 0.
  - Player 1 has 6, 7, and 4, while Player 2 has 2, 5, and 0.
  - They arrange their cards to form the greatest possible numbers as follows: 764 and 520.

  Since 764 > 520, Player 1 scores 1 point.