ગુજરાત શૈક્ષણિક સંશોધન અને તાલીમ પરિષદ, ગાંધીનગરના પત્ર-ક્રમાંક
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A 'Teacher's book' has been prepared for teachers and parents (separately). Kindly use this.

MATHEMATICS

Standard 3

(Semester I - II)

PLEDGE

India is my country.

All Indians are my brothers and sisters.

I love my country and I am proud of its rich and varied heritage.

I shall always strive to be worthy of it.

I shall respect my parents, teachers and all my elders and treat everyone with courtesy.

I pledge my devotion to my country and its people.

My happiness lies in their well-being and prosperity.

Price : ₹ 81.00

Name of Student : _____

Name of School : _____

Class : _____ **Roll No.** _____

Gujarat State Board of School Textbooks
'Vidyayan', Sector 10-A, Gandhinagar-382010

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PREFACE

In keeping with the guidelines laid down under NCF-2005 and RTE-2009, structural pedagogical changes have come about in primary education, curriculum and syllabus design and textbooks across India. This change refers to our understanding of concerned subjects and teaching-learning procedure on the whole. The primary objective of this syllabus is to foster creativity, out-of-box thinking, logical and analytical skills among young children keeping this approach in mind, the Textbook Board of Gujarat takes pleasure in introducing the textbook of **Standard 3 Mathematics** to students, teachers and parents painstakingly prepared by G.C.E.R.T., Gandhinagar.

IGNUS-erg Team Members have provided vital inputs and guided the State Resource Group members in the entire process of framing new syllabus and designing the textbooks. UNICEF and the core-group members of the concerned subjects have been quite helpful at various junctures.

Before prescribing this textbook in the schools across Gujarat, Gujarati edition had been introduced in selected schools on an experimental basis. Based on the feedback received from the stakeholders, necessary changes have been incorporated by Gujarat Council of Education and Research Training.

Gujarat State Board of School Textbooks convened a meeting of invited subject-experts and experts from GCERT to prepare the final draft of Gujarati edition textbook before prescribing it in the primary schools across Gujarat.

After that Gujarat State Board of School Textbooks has invited experienced teachers to translate it into english and subject expert teachers reviewed this book and then final edition is prepared.

Every effort has been made to maintain quality of the book and to cater to the taste of young students. We hope that young children will like the four-coloured form of this textbook and make the optimum use of this book. Efforts have been made to make this text book errorfree. Still we solicit suggestions from all the stakeholders.

Dr. Bharat Pandit
Director

Dr. Nitin Pethani
Executive President

Date : 3-3-2015

Gandhinagar

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FUNDAMENTAL DUTIES

It shall be the duty of every citizen of India :

(a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;

(b) to cherish and follow the noble ideals which inspired our national struggle for freedom;

(c) to uphold and protect the sovereignty, unity and integrity of India;

(d) to defend the country and render national service when called upon to do so;

(e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;

(f) to value and preserve the rich heritage or our composite culture;

(g) to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures;

(h) to develop the scientific temper, humanism and the spirit of inquiry and reform;

(i) to safeguard public property and to abjure violence;

(j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement.

(k) to provide opportunities for education by the parent or the guardian, to his child or a ward between the age of 6 and 14 years as the case may be.

INDEX

Semester I

Semester II

About this Text-Book....

This text-book has been prepared with a view to developing expected skills among the students on the basis of Gujarat Curriculum Frame-work (GCF). Special emphasis has been put on acquaring the knowledge through principles by the students in such a way that, they may not resort to craming. The maximum efforts has been made so that the children learn the concepts of Mathematics, students can think logically. Solve the problems, understand the roll of Mathematics in the beauty of nature and can use Mathematics in day-to-day dealings.

Each chapter begins with the activities based on the experiences of the children. The objective is that the studetns may be inspired to think, may do similar experiments and finally; what they have learnt may be evaluated as per method of ERAC by themselves.

For the preparation of this new text-book the parameters decided are : syllabus according to the age-group of children, continuity and co-ordination of concepts of two standards, simple and short presentations, life-oriented concepts as per guidelines of RTE and utility of local objects. A group of Mathematics teachers directly teching in the primary schools who are selected in SRG have prepared and reviewed this text-book as per the parameters mention here. This final script has been prepared with appropriate correction after getting reviewed by the experts of mathematics and after three years introductory implimentation of Gujarati edition by the Gujarat State Board of School Textbooks.

Each chapter in the text-book is introduce with the titles : 'Let us recall', 'Let us learn Something new', 'Practice' and 'exercise'. The answers to the exercises are given at the end of the chatper. 'Revision' has been given at the end of every three or four chapters so that students may get practice.

The syllabus of this text-book is divided into two semester. Chapter 1 to chapter 5 are in the 1st semester and chapter 6 to chapter 13 are in the 2nd semester.

The concept of place-value and comparison for numbers upto 999 is in chapter 1 : Numbers-1. Odd and even numbers is in chapter 2 : Numbers-2. Addition of two or three digit numbers with two or three digit numbers without carrying forward and with carrying for forward where sum will not exceed 999 is in chapter 3 : Addition. Subtraction of two or three digit numbers from two or three digit numbers without borrowing and with borrowing in chapter 4 : Subtraction. Multiplication of two or three digit numbers by one digit numbers so that the products do not exceed 999 in chapter 5 : Multiplication.

The concept of reading the calender, mutual conversion of hours and minutes and their addition in chapter 6 : Time. Identification geometrical shapes like triangle, suare, rectangle, circle, pentagon and hexagon in chapter 7 : Shapes. Division of two or three digit numbers by 1 digit numbers in chapter 8 : Division. Proper fractions having numberator as well as denominator not greater than 4 in chapter 9 : Fraction. Introduction of coins of denomination rupee, one rupees, two rupees, five rupees and ten rupees and also currency notes in chapter 10 : Currency. Mutual conversion of meter-centimeter and their addition-subtraction in chapter 11 : Length. Relation between kilogram and gram and their addition-subtraction in chapter 12 : Weight. Addition-subtraction of litre-mililitre in chapter 13 : Capacity. Explanation is given by using Pictures, figures, project-work, educational-games and various activities.

It is hoped that the students, the teachers and the parents will like this text-book prepared for the students of standard III.

1 Numbers : 1

- **Let us recall :**
- **Activity 1 :**

In the picture given above children are playing with gravels, aren't they ? So, friends, you also go out of the class-room and collect a handful of gravels. Make groups of four and collect the gravels. As shown in the picture, keep the number-card on the ground, drop the eraser from a little height. Pick the number of gravels with you as the eraser falls on a certain number. Play five times like this and then count the number of gravels collected by you.

1. Write the number of gravels collected by you.

   In figures : ..... In words : .....

2. Who has collected the maximum number of gravels ? .....

   How many ? .....

3. Who has the minimum number of gravels ? ..... How many ? .....

4. Did your friend collect less or more gravels than you ? .....

   How many ? ..... .

5. Arrange the numbers with you in ascending order :

....., ..., ..., ..., ...

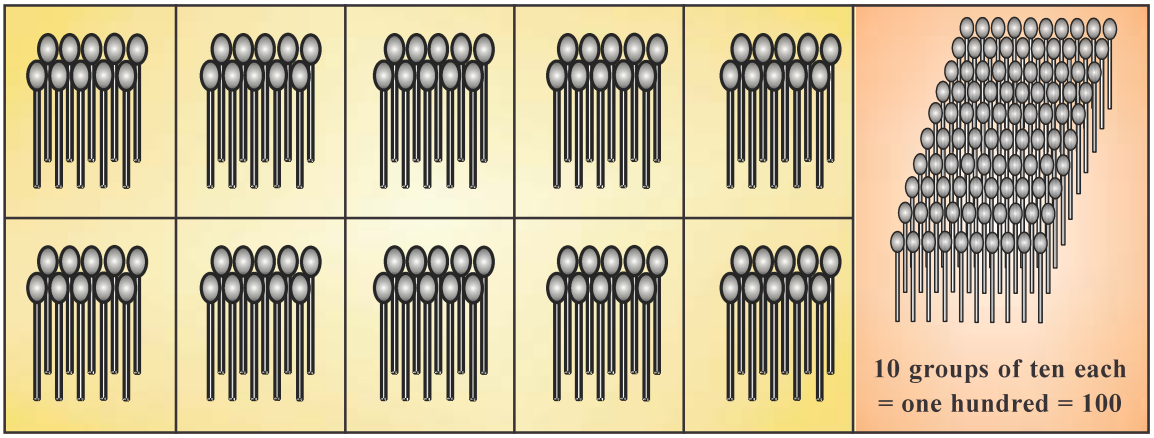
Now, make heaps of ten gravels each from all the gravels you have. How many such heaps of ten gravels each are formed ? How many gravels are left out ? Write the data in the table given below. Write similar information by asking your friends.

Name of friends	No. of gravels (in figures)	No. of gravels (in words)	Heaps of ten gravels each	No. of gravels left out
Nilesh	15	Fifteen	1	5

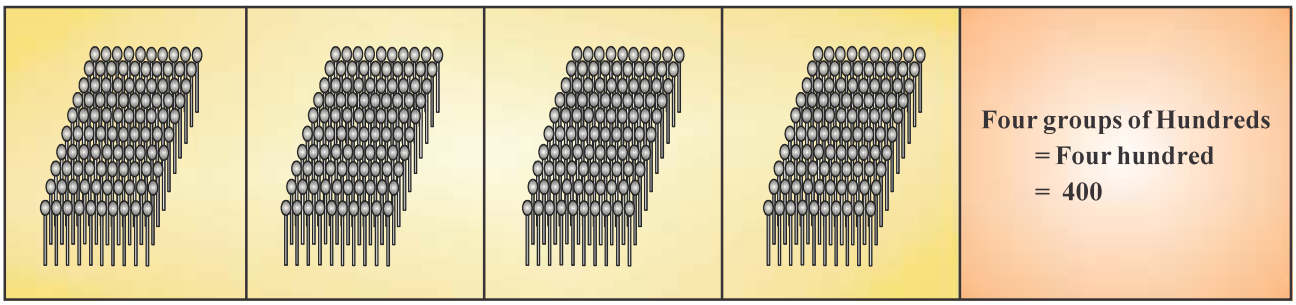
Make ten heaps of ten gravels each by collecting the heaps from your friends. Ten heaps of ten gravels mean total 100 (one hundred) gravels.

- **Let us learn something new :**

Groups of Ten :



Groups of Hundreds :



5 groups of hundreds = five hundred = 500

7 groups of hundreds = seven hundred = 700

9 groups of hundreds = nine hundred = 900

10 groups of hundreds = one thousand = 1000

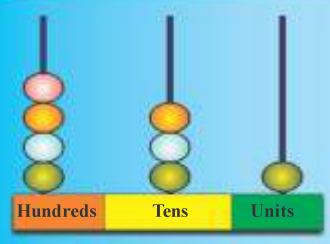
Numbers from 101 to 999 :

Fill in the blanks in the table given below to make them correct/true.

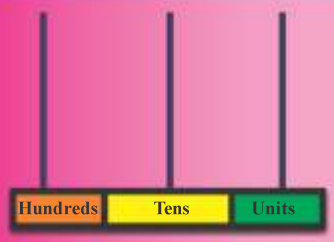
In figures	In words	In figures	In words
99	Ninety nine	.....	Five hundred
100	.....	637	.....
101	One hundred one	777	.....
109	.....	687	Six hundred eighty-seven
.....	One hundred fifty-two	.....	Seven hundred-eight
.....	Two hundred eighty-four	825	.....
745	.....	954	.....
.....	Four hundred forty-four	811	.....
497	.....	.....	Seven hundred forty-nine
599	.....	889	.....

Understand the example and write accordingly :

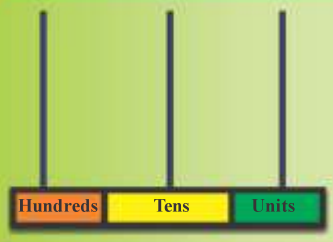
Example 1 :



Number : 431
In words : Four hundred thirty-one
Expansion : 4 Hundreds
3 Tens 1 Units

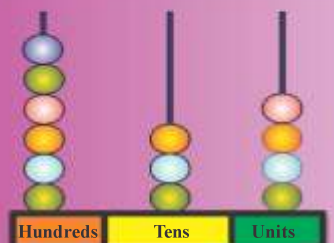


Number : .....
In words : Five hundred forty
Expansion : ..... Hundreds
..... Tens ..... Units



Number : .....
In words :
Expansion : 6 Hundreds
2 Tens 0 Units

Number : 704
In words :
Expansion : ..... Hundreds
..... Tens ..... Units



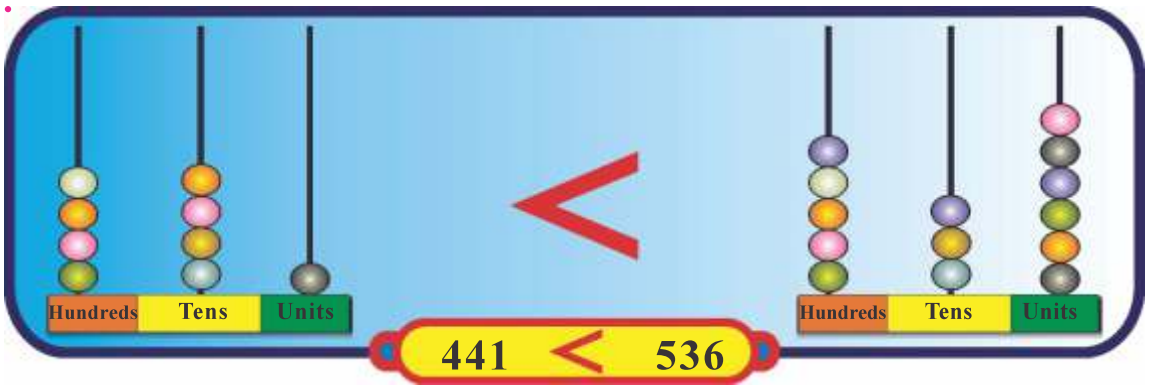
Number : .....
In words :
Expansion : ..... Hundreds
..... Tens ..... Units

Symbolic form of smaller and bigger numbers :

Understand the meaning of following symbols :

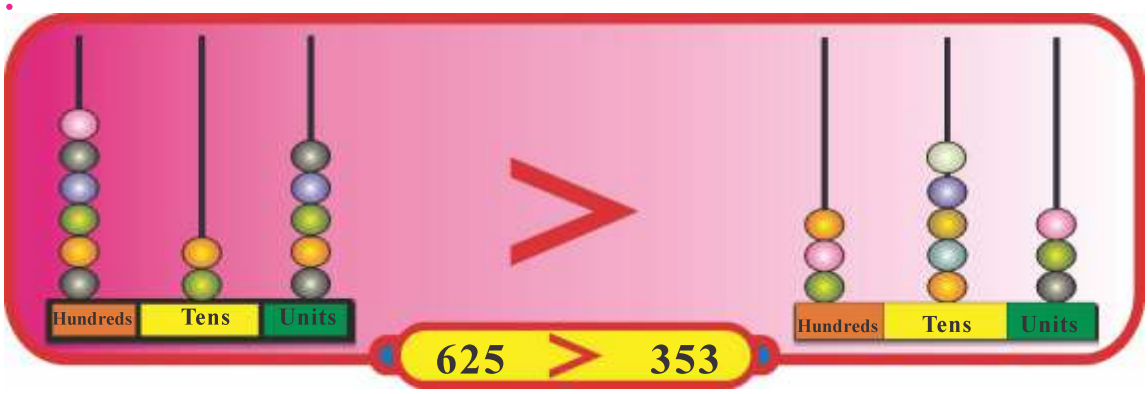
- '<' less than, smaller number < bigger number
- '>' greater than, bigger number > smaller number
- '=' equal to

Example 2 :



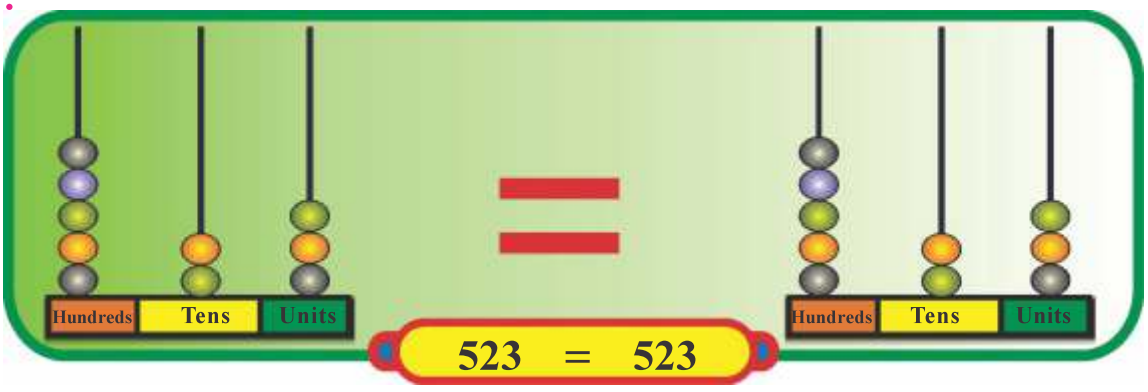
441 is smaller than 536.

Example 3 :



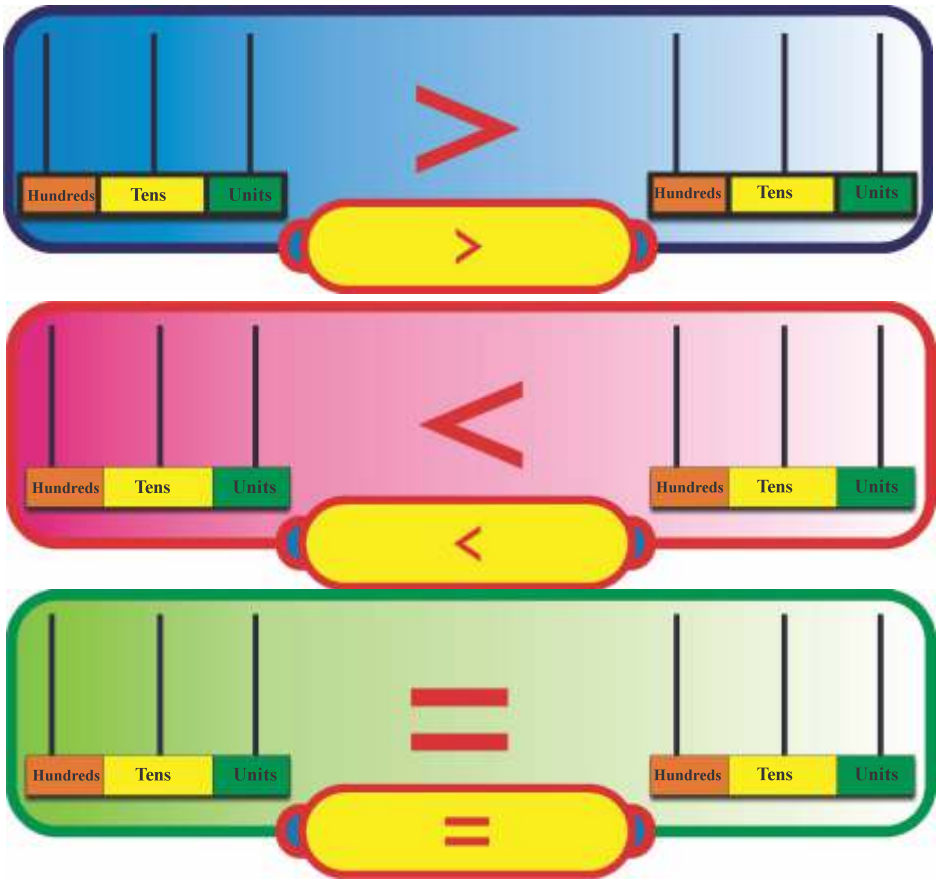
625 is greater than 353.

Example 4 :



Both the numbers are equal.

Now, select any two numbers yourself. Draw the beads in both abacuses given below and write the numbers thus formed :



Put the symbols >, < or = to make the statement true :

50 > 15	78 75	160 > 145
445 145	588 388	775 775
577 463	478 435	160 750
201 305	888 498	973 979

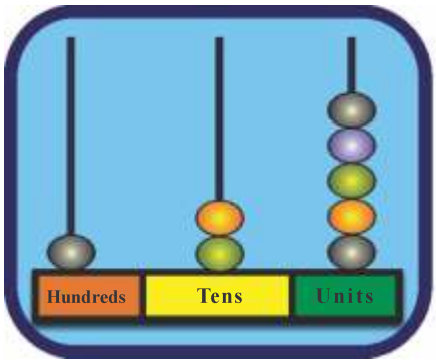
Put ○ on the wrong symbols in the table given below :

45 = 54	252 > 215	754 > 775
435 > 430	588 < 388	619 < 815
201 > 305	699 = 699	754 < 574

Place-value and writing the numbers with the help of abacus :

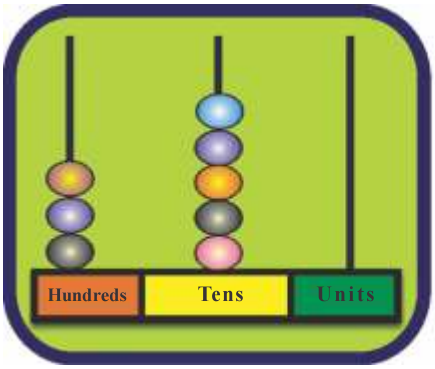
In any three digit number the first digit from left side is a number of hundred, the second digit is a number of ten and the third digit is a number of unit.

Example 5 :



Place	Hundred	Ten	Unit
Beads	1	2	5
Place-value	100	20	5

Fill in the blanks as per above example :



Place	Hundred	Ten	Unit
Beads	.....	.....	.....
Place-value	.....	.....	.....

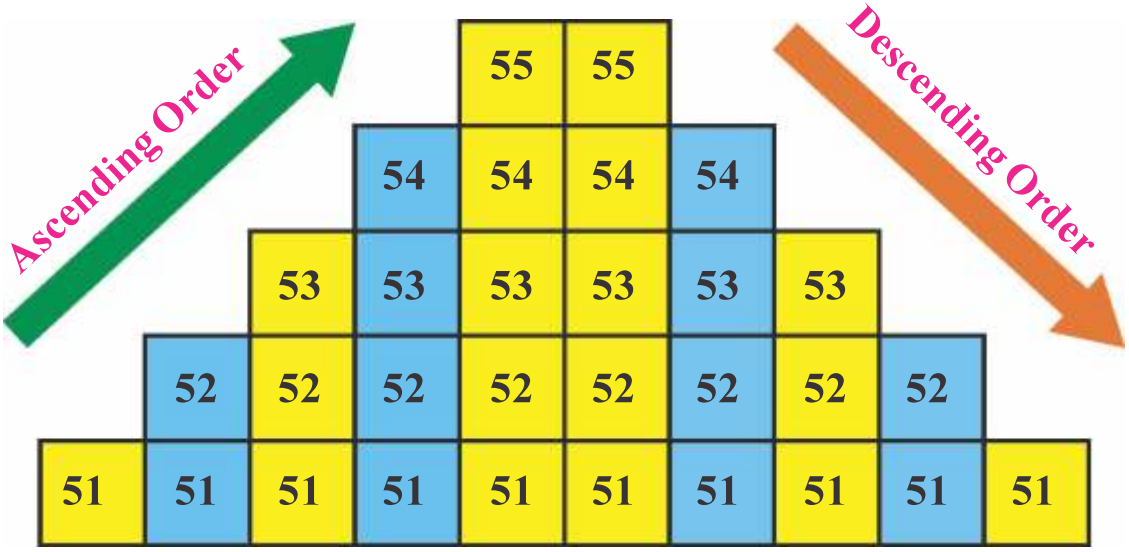
Example 6 : Write the place-value of digits 1, 3, 5 in 135

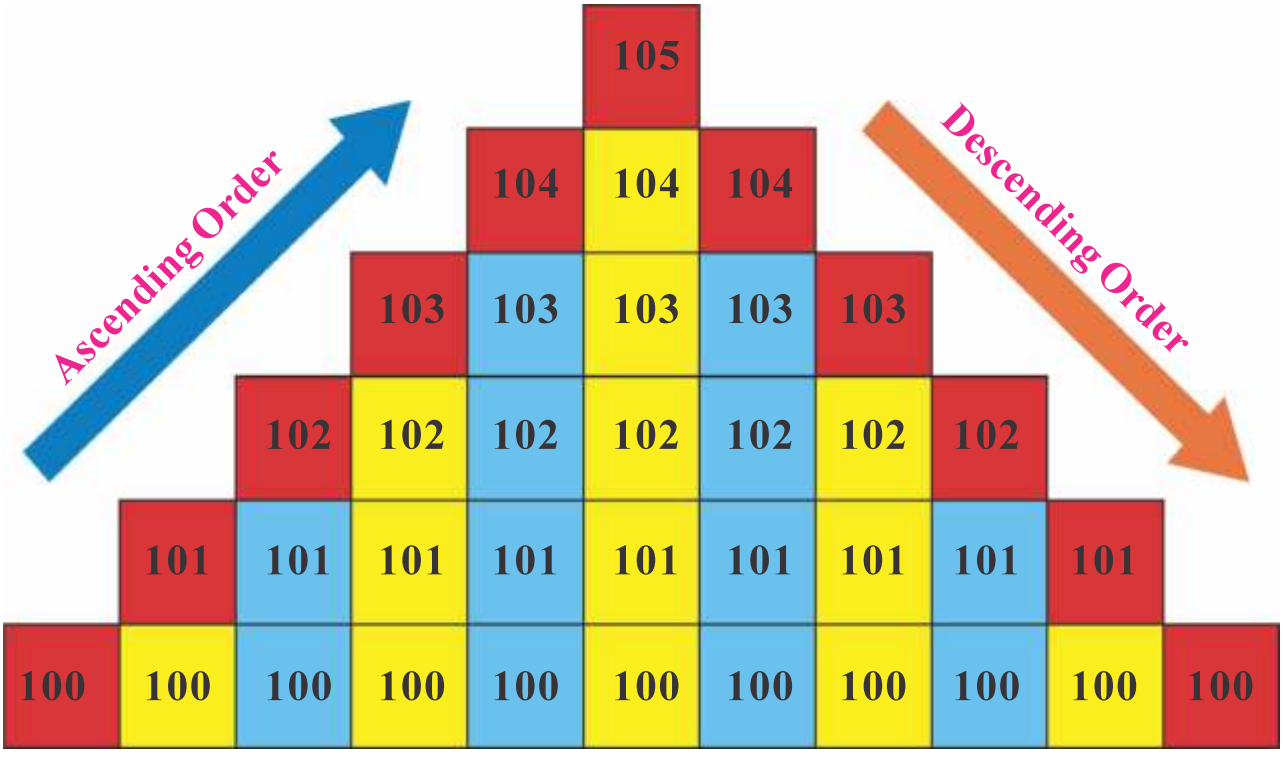
In 135, place-value of 1 is 100; place-value of 3 is 30 and the place-value of 5 is 5.

Write the place-value as per Example 6 :

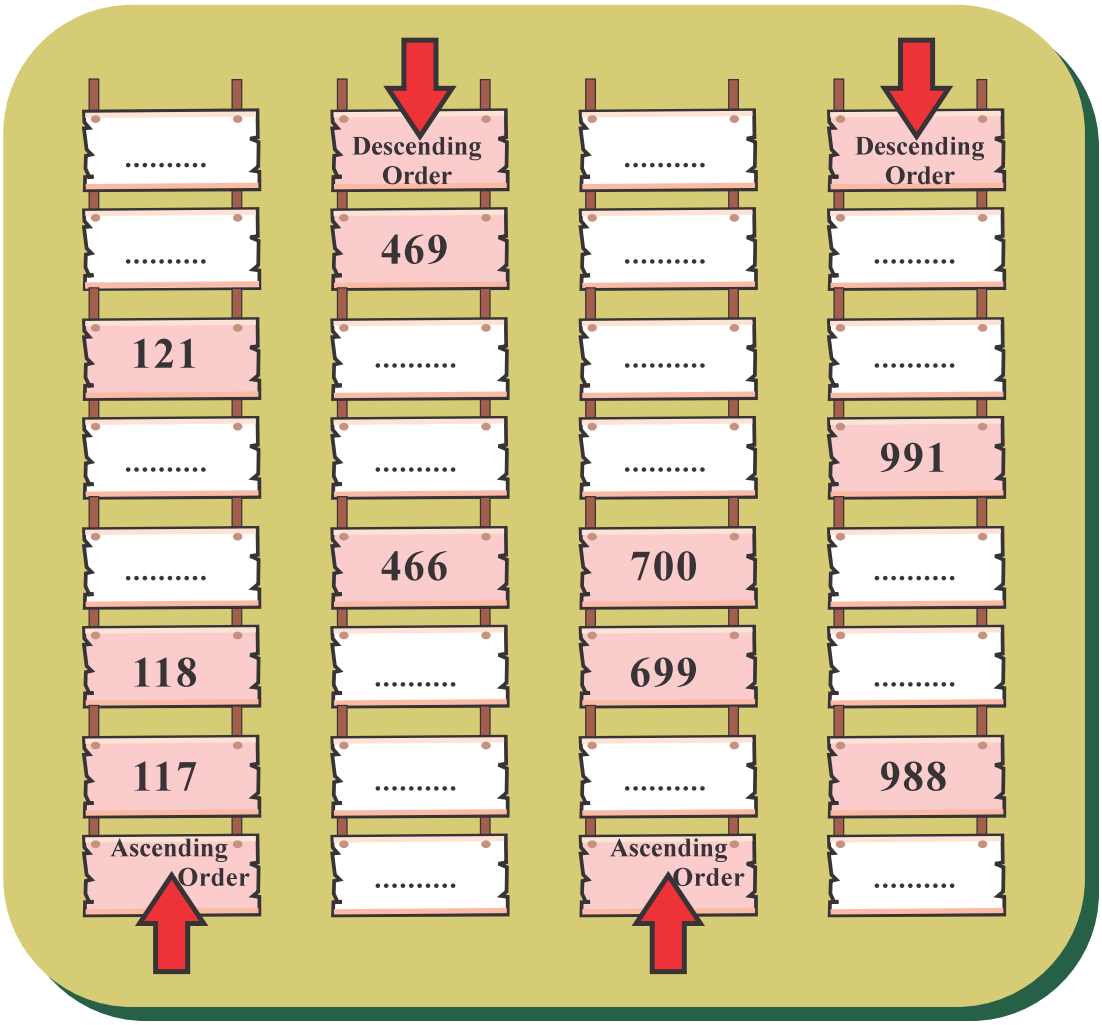
346	.....
854	.....
707	.....
510	.....
555	.....
906	.....

Ascending-Descending order of consecutive numbers :





Do it yourself :



Example 7 :

111 = 1 hundreds + 1 tens + 1 units = 10 tens + 1 tens + 1 units = 11 tens + 1 units	111 = 1 hundreds + 1 tens + 1 units = 1 hundreds + 10 units + 1 units = 1 hundreds + 11 units

Do yourself :

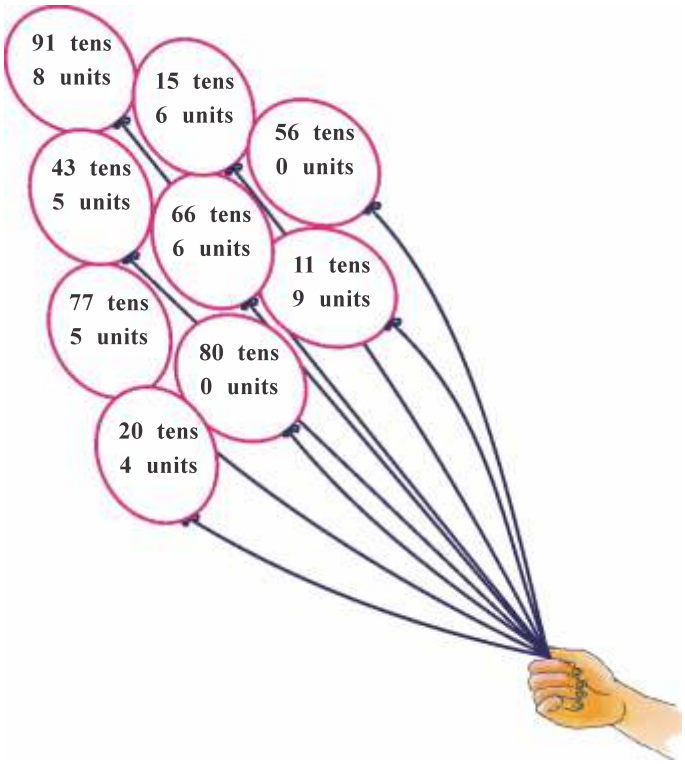
305 = 3 hundreds + ___ tens + ___ units = ___ tens + ___ tens + ___ units = ___ tens + ___ units	305 = 3 hundreds + ___ tens + ___ units = 3 hundreds + ___ units + ___ units = 3 hundreds + ___ units

- **Write the appropriate number in the table given below :**

256 = ... tens + ... units
256 = 2 hundreds + 5 tens + ... units
12 tens + 3 units = ...
1 hundreds + 23 units = ...
5 hundreds + 3 tens = ...
638 = ... hundreds + ... tens + ... units
638 = ... units
5 units + 47 tens = ...
601 = ... tens + ... units
894 = ... tens + ... units
4 units + 2 hundreds + 3 tens = ...

- **Do it yourself : Fill in the colours in the balloons as per the numbers given :**

Red	Green	Blue
One hundred fifty-six	Two hundred four	Nine hundred eighteen
Seven hundred seventy-five	Five hundred sixty	One hundred nineteen
800	435	666



- **Activity 2 :**

You have different cards marked with 3, 4 and 0. Arrange these cards to form different numbers.

By arranging these cards in places of hundreds, tens and units differently the following numbers are formed :

(1) 340 (2) 304 (3) 403

(4) 430 (5) 34 (6) 43

- Ascending order : ....., ..., ..., ..., ..., ...
- Descending order : ....., ..., ..., ..., ..., ...
- The greatest number ..... and the smallest number .....
- Place-value of digits in the numbers formed :

Numbers	Place-value of digit 3	Place-value of digit 4	Place-value of digit 0
340			
304			
430			
403			
043			
034			

- **Obtain numbers by interchanging the following number marked cards as Hundreds, Tens and Units :**

(1) 

- Numbers obtained :

  .....

- Ascending order :

  ....., ..., ...

  ....., ..., ...

- Descending order :

  ....., ..., ...

  ....., ..., ...

- The greatest number :

  .....

- The smallest number :

  .....

Numbers	Place-value of digit 1	Place-value of digit 2	Place-value of digit 4

(2)

- Numbers obtained :

  .....

- Ascending order :

  ....., ..., ...

  ....., ..., ...

- Descending order :

  ....., ..., ...

  ....., ..., ...

- The greatest number :

  .....

- The smallest number :

  .....

Numbers	Place-value of digit 6	Place-value of digit 7	Place-value of digit 8

(3) 5 7 9

- Numbers obtained :

  .....

- Ascending order :

  ....., ..., ...

  ....., ..., ...

- Descending order :

  ....., ..., ...

  ....., ..., ...

- The greatest number :

  .....

- The smallest number :

  .....

Numbers	Place-value of digit 5	Place-value of digit 7	Place-value of digit 9

(4) 3 4 5

- Numbers obtained :

  .....

- Ascending order :

  ....., ..., ...

  ....., ..., ...

- Descending order :

  ....., ..., ...

  ....., ..., ...

- The greatest number :

  .....

- The smallest number :

  .....

Numbers	Place-value of digit 3	Place-value of digit 4	Place-value of digit 5

2 Numbers : 2

- **Let us learn something new :**
- **Activity 1 :**

Friends, bring gravels as per your roll-number in the attendance-register. Make pairs from them.

Number of gravels brought by you : .....

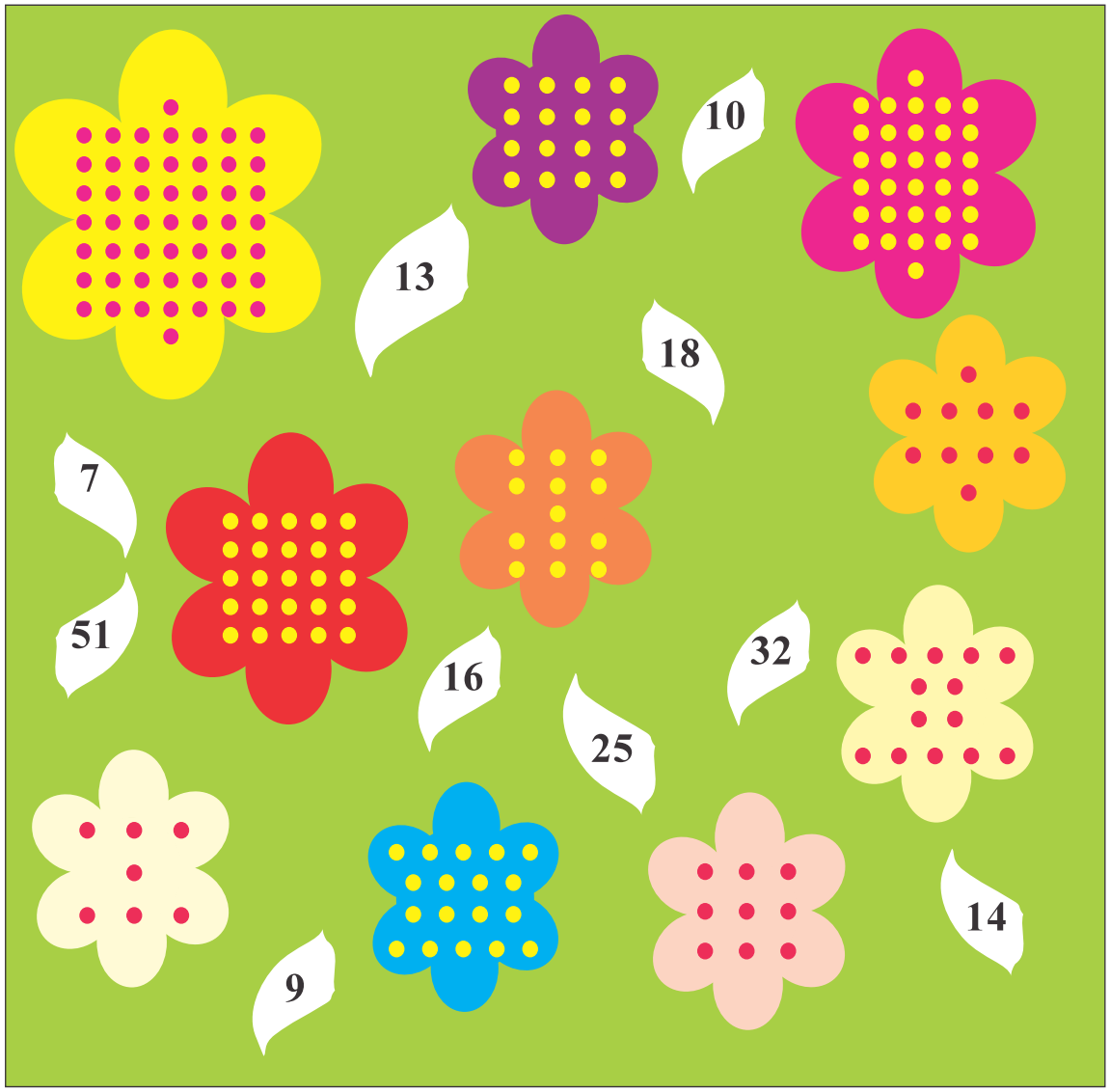
Are the pairs of all the gravels formed ?

Yes or No ? ..... Why ? .....

Name of friend	Number of gravels	Are the pairs of all the gravels formed ? Yes or No?
Lata	15	No

- **Understanding :**
  - If pairs of all the objects are formed, the number of objects is said to be even. For example : 2, 4, 6, 8,... are even numbers.
  - A number is called odd if we cannot make pairs of given number of objects or one object is always left out while making pairs. For example 1, 3, 5, 7, 9, 11,... are odd numbers.
- **Think :**
  - Take matchsticks as per your birthdate and check whether it is even or odd.

- **Activity 2 :** Count the dots and join with appropriate numbers :



Numbers	51	7	18	16	9	32	13	10	14	25
Odd or Even	.....	Odd	.....	Even	.....	.....	.....	.....	.....	.....

See and observe the unit's digit in even and odd numbers :

- Unit's digit in the odd numbers : 1, 3, 5, 7, 9
- Unit's digit in the even numbers : 2, 4, 6, 8, 0

Practice 1

Fill in the blanks as per the given example :

- 16 : Its unit's digit is 6. So it is an even number.

(1) 115 : Unit's digit is ..... So it is an ..... number.

(2) 468 : Unit's digit is ..... So it is an ..... number.

(3) 851 : Unit's digit is ..... So it is an ..... number.

(4) 739 : Unit's digit is ..... So it is an ..... number.

(5) 590 : Unit's digit is ..... So it is an ..... number.

- **Activity 3 :**

Take any three marked number cards from the digits 0, 1, 2,... or 9. Arrange them in different ways. Answer the following questions.

- Digits chosen by you : ☐ ☐ ☐
- How many numbers can be formed ? .....
- Which numbers are obtained ? .....
- Which are the odd numbers ? .....
- Which are the even numbers ? .....
- Which is the greatest number ? ..... Odd or Even ? .....
- Which is the smallest number ? ..... Odd or Even ? .....
- Which is the greatest odd number ? .....
- Which is the greatest even number ? .....

Repeat the above activity three times by taking different cards.

Practice 2

Do as directed in the table given below :

- Fill in red colour in one digit odd numbers.
- Fill in green colour in one digit even numbers.
- Draw ○ on the greatest one digit odd number.
- Draw □ on the greatest one digit even number.
- Draw Δ on the smallest two digit number.
- Fill in saffron colour on the even numbers whose ten's digit is 5.
- Fill in yellow colour on the odd numbers whose ten's digit is 7.
- Fill in blue colour on the odd numbers whose ten's digit is 5.
- Draw ⊕ on the even numbers having the same tens and units digit.
- Draw ϕ on the odd numbers having the same tens and units digit.

1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
10	20	30	40	50	60	70	80	90	100

Exercise

1. Write the missing numbers :

(1) 1, 3, 5, 7, ..., ..., ..., ..., ..., ..., 21, 23

(2) 2, 4, 6, 8, ..., ..., ..., ..., ..., ..., 22, 24

(3) 32, 34, ..., ..., ..., ..., ..., ..., 48, 50

(4) 31, 33, ..., ..., ..., ..., ..., ..., 47, 49

(5) ....., ..., ..., 27, 29, 31, 33, ..., ..., ..., ...

(6) 36, 34, 32, ..., ..., ..., 24, 22, 20, 18

(7) 29, 27, 25, ..., ..., ..., ..., ..., ..., 11, 9

2. Write the odd numbers between 20 and 30 :

3. Write the even numbers between 50 and 60 :

4. Write the odd and even numbers from 108 to 121 :

(1) Odd numbers : ....., ..., ..., ..., ..., ..., ...

(2) Even numbers : ....., ..., ..., ..., ..., ..., ...

5. Encircle (put ◯) the odd numbers :

23	32	6	561	657	675	238	209	320

6. Encircle (put ◯) the even numbers :

48	51	7	223	468	772	894	916	900

7. Classify the following numbers into odd and even numbers :

43, 58, 62, 71, 75, 78, 80, 85, 92,
103, 114, 122, 134, 137, 233, 242, 260, 282,
293, 300, 310, 320, 340, 359, 369, 389, 400,
572, 683, 779, 980, 674, 799, 858, 995, 801

Practice 1

(1) 5, odd (2) 8, even (3) 1, odd (4) 9, odd (5) 0, even

Exercise

1. (1) 9, 11, 13, 15, 17, 19 (2) 10, 12, 14, 16, 18, 20
(3) 36, 38, 40, 42, 44, 46 (4) 35, 37, 39, 41, 43, 45
(5) 21, 23, 25, 35, 37, 39, 41 (6) 30, 28, 26
(7) 23, 21, 19, 17, 15, 13

2. 21, 23, 25, 27, 29 **3.** 52, 54, 56, 58

4. (1) 109, 111, 113, 115, 117, 119, 121
(2) 108, 110, 112, 114, 116, 118, 120

5. 23, 561, 657, 675, 209 **6.** 48, 468, 772, 894, 916, 900

7. Odd numbers : 43, 71, 75, 85, 103, 137, 233, 293, 359, 369, 389, 683, 779, 799, 995, 801

Even numbers : 58, 62, 78, 80, 92, 114, 122, 134, 242, 260, 282, 300, 310, 320, 340, 400, 572, 980, 674, 858

3 Addition

Let us recall :

1. Observe the following in the above picture. Count and write their numbers :

(1)  = ...

(2)  = ...

(3)  = ...

(4)  = ...