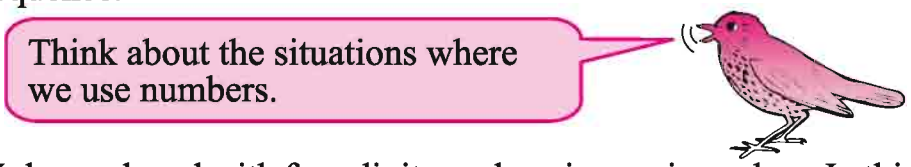
Chapter 1

Know the Numbers

1.1 We count objects according to our requirement. For example number of students in the school, number of people living in the village, number of books kept in the library, number of tiles placed on the floor etc. We can represent these numbers by proper number digits. Now look around and find out how many objects can you count?

Thousands years ago people knew only about small numbers. Gradually they learned to work with large numbers and also learned to express those numbers by symbols. Numbers help us to decide which group of objects is larger and which is smaller? With the help of numbers we can arrange the objects in a proper sequence.

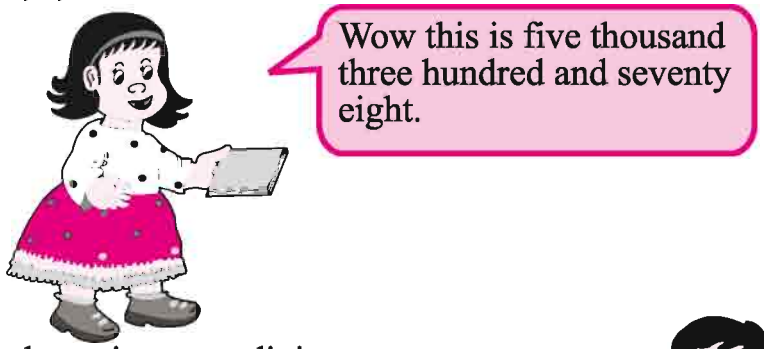


We have played with four digit numbers in previous class. In this chapter we will learn about some more numbers.

1.1.1 Making numbers

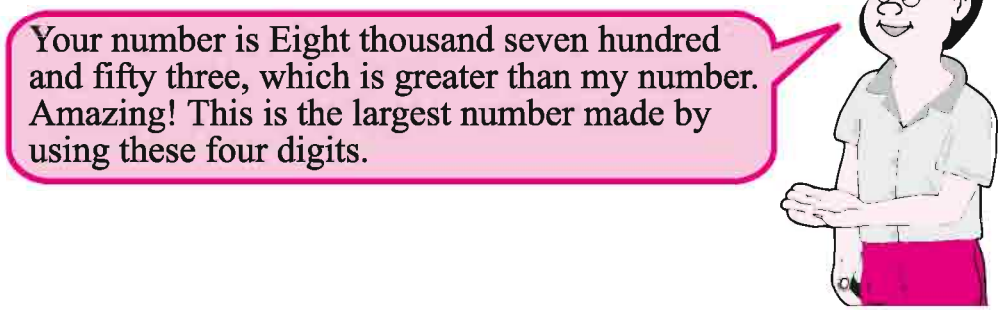
Ramesh and Afsana are trying to form a four digit number. Ramesh made a number using digits 3, 5, 7, 8.

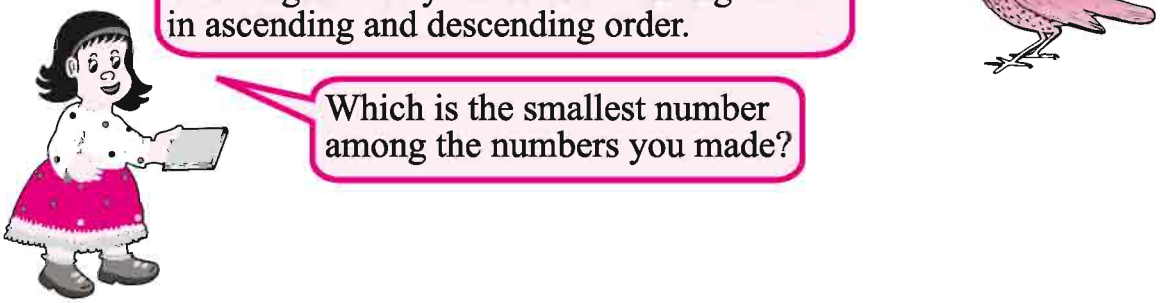
5378



Afsana got another number using same digits.

8753





1.1.2 Comparison of numbers

Devika is playing a game. She asks her friends to form numbers using digits 2, 0, 1. Rohit made the number 210 and Mamta 21. Then Devika asks whose number is greater. Rohit says –Mine because there are more digits in my number. Now Devika says let's try to form another number of five digits using 4,5,2,6.

52643	Fifty two thousand six hundred forty three.
65234	Sixty five thousand two hundred thirty four.
64532	----------
23456	----------
65432	----------
64352	----------
----------	----------
----------	----------
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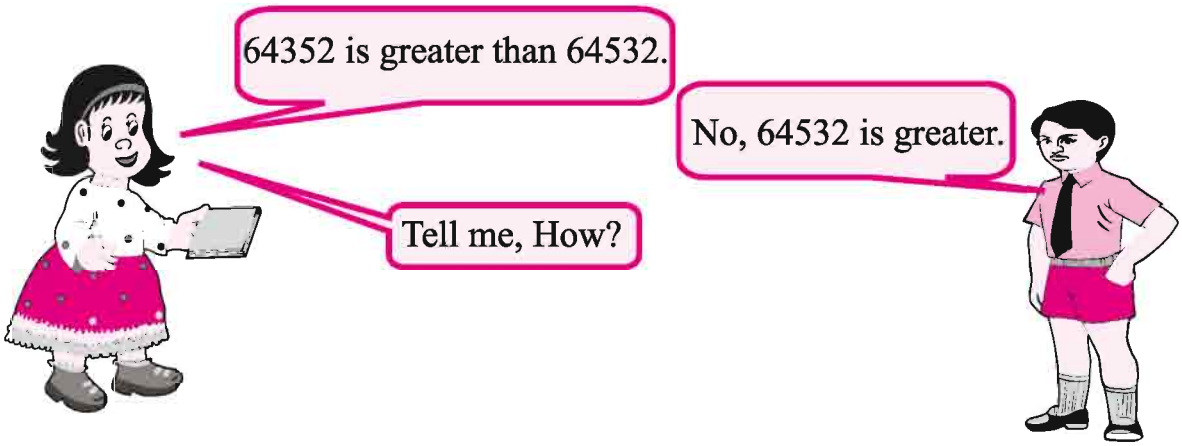
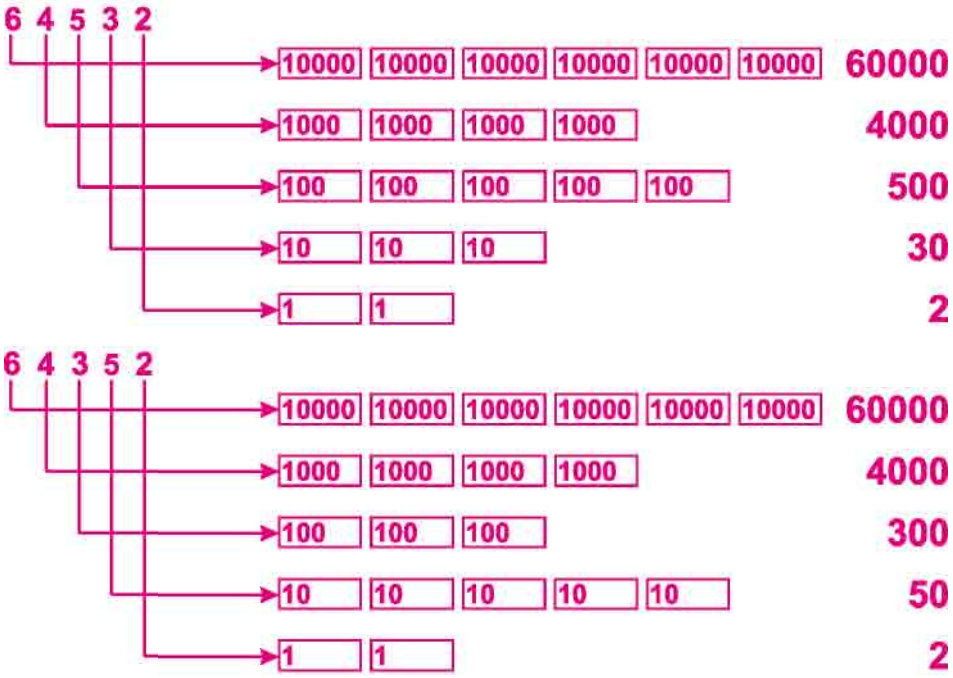
Looking at these numbers, Rohit said 65432 is the greatest and 23456 is the smallest number.



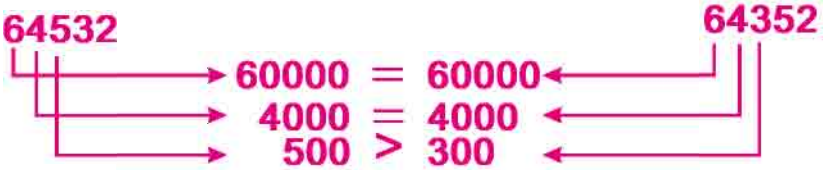
Rohit compared the number as follow:



can I compare these numbers even without place value of each?

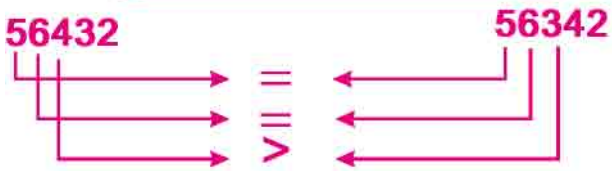
Ten thousand's and thousand place value digits are same in both of the above numbers. 5 is at the hundredreth places in 64532 and 3 is at the hundredreth places in 64352. Therefore 64532 is greater.

We can compare like this as well.



Number 64532 is greater than 64352 i.e. 64532>64352.
Now compare 56432 and 56342.

Compare the numbers 56432 and 56342 from left to right and see which is the bigger number.



Can you tell us which number is greater?

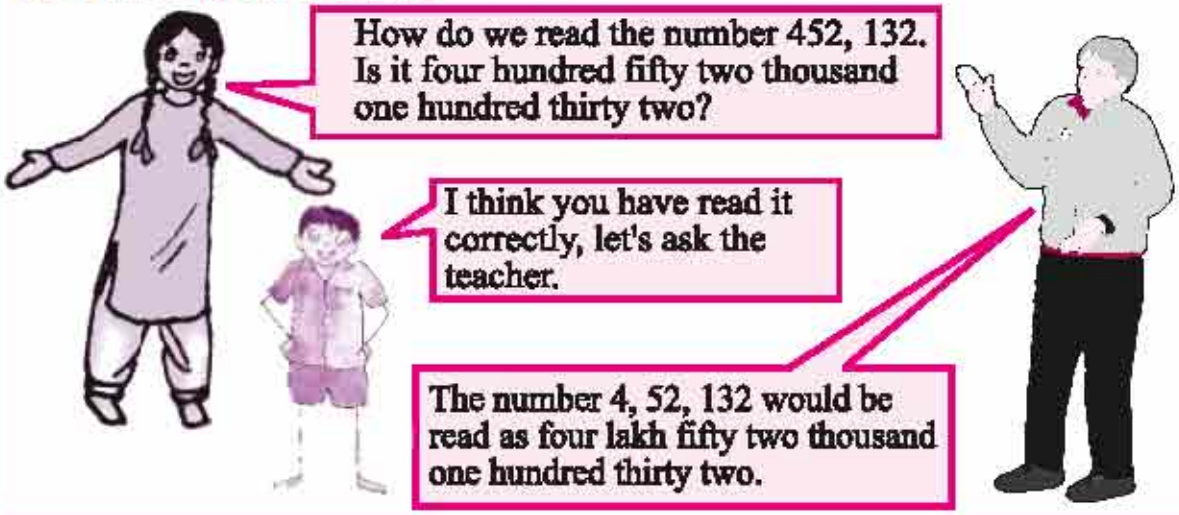
Do and learn

1. In the following group of numbers; Circle (o) the greatest number and put a cross (x) on the smallest number.
   (i) 4536, 4892, 4370, 4452
   (ii) 15623, 15073, 15189, 15800
   (iii) 25286, 25245, 25270, 25210
   (iv) 6895, 23787, 24569, 24659
   (v) 4685, 4444, 3847, 9071
2. Complete the following table

52,132	5 ten thousands, 2 thousands, 1 hundred, 3 tens, 2 ones 50,000+2,000+100+30+2	Fifty two thousands one hundred thirty two.
45, 471		
98,453		
67,309		
70,058		
12,345		
29,761		
33,333		
81,427		

Draw o (circle) on the greatest number and ☐ on the smallest number given in above table.

1.1.3 Reading the Numbers



Now take six digits of your choice and form different numbers. Ask your friend to read those and compare.

Complete the following table

Number (In digits.)	Lac	Ten Thou-sand	Thou-sand	Hun-dred	Tent-hs	Units	Number in words
3,52,027	3	5	2	0	2	7	Three lakh fifty two thousand twenty seven.
2,43,596							
7,00,295							
9,99,999							
1,00,000							
5,67,890							
6,04,307							
.....							

Discuss with your friends and arrange the above numbers given in the table in ascending order.

Can you tell us, if we add 1 to the largest number of six digits, what number will we get?

I know the largest number of six digits is 9, 99,999. So adding 1 to it we get 10, 00,000. This is the smallest seven digit number. How do we read it?

May be ten lakhs. Let's talk to teacher.

Yes we will read it ten lakhs. Now tell me how you will read 15, 40,400?

Do and learn

1. Write the number names for the following digits.

(I) Five thousand five - 5005

(ii) Five thousand four hundred thirty eight -

(iii) Thirty eight thousand four hundred -

(iv) Sixty five thousand seven hundred forty -

(v) Eighty nine thousand three hundred twenty four -

(vi) Twenty lakh five thousand two -

(vii) Eighty five lakh eight hundred one -

(viii) Seven lakh seven thousand seven -

2. Keeping the place value of number six at the same place and jumbling the digits of number 6350947; the smallest number shall be;

(i) 6975430 (ii) 6043579 (iii) 6034579 (iv) 6034759 ( )

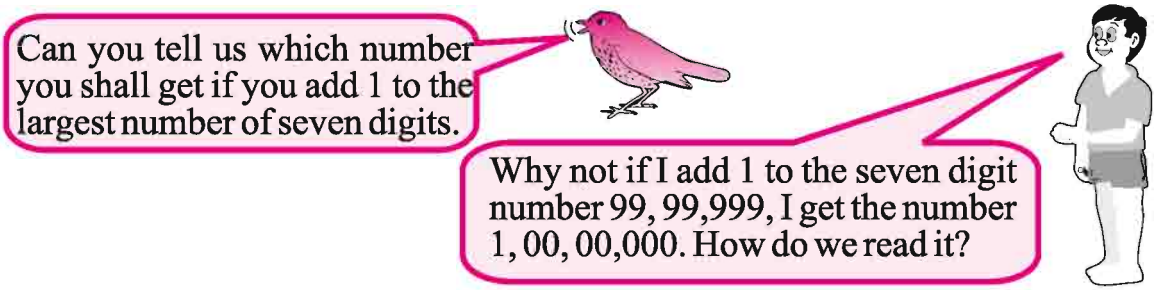
3. The largest five digit number using digits 7, 8 and 9 is

(i) 98978 (ii) 99897 (iii) 99987 (iv) 98799 ( )

4. Complete the following table -

Number (In digits.)	Ten Lac	Lac	Ten Thou-sand	Thou-sand	Hun-dred	Tent-hs	Units	Number in words
57,68,423	5	7	6	8	4	2	3	Fifty seven lakh sixty eight thousand four hundred twenty three
99,99,999								
40,50,607								
32,05,004								
10,00,000								
98,76,543								

Discuss with your friends and write the numbers in descending order.



Even I don't know. Let's ask the teacher.

We read it one crore, this is also the smallest number of 8 digits.

It means we will read the number 2,20,51,965 as two crore, twenty lakhs, fifty one thousand nine hundred sixty five.

Do and learn

Complete the following table.

Number (In digits.)	Crores	Ten Lac	Lac	Ten Thou-sand	Thou-sand	Hun-dred	Tent-hs	Units	Number in words
4,53,10,670	4	5	3	1	0	6	7	0	Four crores, fifty three lakhs ten thousand six hundred seventy
4,35,01,076									
7,65,43,201									
1,00,00,000									
9,09,09,009									
6,50,41,300									

Discuss with your friends and write the numbers given in the table in ascending and descending order.

Exercise 1.1

1. Write the following numbers in words.

(i) 5782 (ii) 75,879 (iii) 3,89,087
(iv) 21,32,452 (v) 7,68,92,479 (vi) 50,60,798

2. Write the following in form of numbers.
   (i)Sixty eight thousand five hundred twenty nine
   (ii) Eighty nine thousand seventy nine
   (iii) Five lakh seventy two thousand fifty seven
   (iv) ninety lakh ninety thousand nine hundred ninety
   (v) One crore, twenty one lakh,thirty one thousand forty one.
3. Given the numbers 5,7,0,6,1,3 and 4.Form five numbers of seven digits using these.
4. Put the symbols <, > and = in the boxes given between the following numbers.
   (I) 1403789 ☐ 140378 (ii) 560325 ☐ 560326
   (iii) 732108 ☐ 732208 (iv) 32872015 ☐ 32852017
   (v) 612345 ☐ 611345
5. Write the following numbers in ascending order.
   (i) 8435, 4835,13584, 5348,25843
   (ii) 1100,1001,1011,1010
   (iii) 50500,50050,55555,50505
   (iv) 58695376, 58685376, 58695306, 58685378
6. Write the following numbers in descending order.
   (i) 847, 9754, 8320,571
   (ii) 4060,6040,4600,4646
   (iii) 9801,25751,36501,38802
   (iv) 10001, 11001,10101,10011

1.2 Number System

1.2.1 Indian number system

In Indian static method, we use units, tens, hundred, thousand, and further lakhs and crores. We use comma to display thousand, lakh and crore digit numbers. First comma is used in the place of hundred(third from right to left) and represents thousand, second comma is used after next two digits(fifth digit from right)to represent lakh and third comma is used further next two digits which represents crore.

1 Ten	= 10 units	
1Hundred	= 10 tens	= 100 units
1Thousand	= 10 hundreds	= 100 tens
1Lakh	= 100 thousand	= 1000 hundreds
1 crore	= 100 lakh	= 10,000 thousands

1.2.2 International number system

In international static method unit, ten, hundred, thousand and million is used further. Commas are used to differentiate the period of hundred, thousands and millions.

For example number 22,051,965 is read as twenty two million fifty one thousand nine hundred sixty five.

Think about it

How many lakhs is equal to one million?

How many millions is equal to one crore?

Choose any five large numbers and write those numbers in national and international both statics methods.

1.3 Numbers in various scripts

Hindu arabic digits	Devnagri digits	Roman digits
1	१	I
2	२	II
3	३	III
4	४	IV
5	५	V
6	६	VI
7	७	VII
8	८	VIII
9	९	IX
10	१०	X
11	११	XI
12	१२	XII
13	१३	XIII
14	१४	XIV
15	१५	XV

In Roman method we write big numbers as follows

Numbers	20	30	50	100	500	1000
Roman	XX	XXX	L	C	D	M

(i) If a symbol is repeated, its value is added on every repetition.

(ii) No symbol is repeated more than three times. Symbols V, L, and D are never repeated.

(iii) If a symbol with lesser value is to the right side of a symbol of greater value, then it is added to the greater number.

(iv) If a symbol with lesser value is placed to the left side of symbol with greater value then it is subtracted from the greater number.

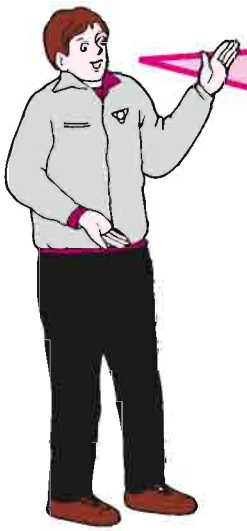
(v) Value of symbols V, L and D is never subtracted. Symbol I can only be subtracted only from V and X. Symbol X can only be subtracted from L, M and C.

1.4 Understanding Units

We used centimeters, meters and kilometer as units of length in previous class.

When I measure my pencil, its length falls between 17 cm and 18 cm. What is its right measurement?

Even I don't know.



Look there are ten marks between 17cm and 18 cm. Each of these marks represent millimeter.Length of your pencil is up to 8 marks after 17cm. So its measurement would be 17.8(seventeen point 8) cm.

let's learn about relations between units.

10 millimeter=1 centimeter (1cm)
100 centimeter =1 Meter (1m)
1000 Meter=1 kilometer (1Km)

Do you know how many centimeters make 1 Kilometer

Look, like this:

1 Kilometer = 1000 meter
= 1000 × 100 Centimeters
= 1,00,000cm

We did use kilogram and grams weight to weigh in previous class.

Do you know how many grams make 1 kilogram?

Why not, 1000 gms make 1 kilogram.

1 kilogram= 1000 gram

You must have seen weights in the shop of a jeweller. There are some very smaller weights less than gram. These are used to weight milligram.

1 Gram =1000 miligram

In the previous class we learned about litre and mililitre for measuring liquids and also learned about the relation between these two:

1 litre = 1000 mililitre

Look carefully we have used words mili, centi and kilo. Kilo means thousand and it is the greatest. Centi is used for 100'th and mili is used for 1000'th. And it is the smallest unit.

1.2 Bigger numbers for practical use

Detail of One month's purchase from khichdi kirana store is as follows:

Kirana store
Rate List

Sugar	–	Rs. 35 per kg
Gur	-	Rs 40 per kg
Salt	-	Rs. 7 per kg
Pure ghee	-	Rs. 395 per Kg
Tea leaves	-	Rs. 175 per Kg
Chilli powder	-	Rs. 180 per kg
Coriander powder	-	Rs 170 per kg
turmeric powder	-	Rs.170 Per kg.
Seeng dana	-	Rs. 90 per kg.
Oil	-	Rs. 85 per lit.
Chana Dal	-	Rs. 65 per kg
Tuar Dal	-	Rs. 115 per kg
Rice basmati	-	Rs. 65 per kg.
Besan	-	Rs. 70 per kg
Moong	-	Rs. 60 per kg
Soap cake(75gm)	-	Rs.13 per piece

Purchase Details

Gur	325 Kg
Sugar	3837 Kg
Rice basmati	906 Kg
Seeng dana	164 Kg
Pure ghee	500 Kg
Tuar dal	1369 Kg
Tea leaves	188 Kg
Salt	234 Kg
Chilli powder	93 Kg
Coriander powder	147 kg
Turmeric Powder	189 kg
Chana Dal	3273 kg
Soap cake (75 gm.)	13048 pieces

1. Can you find out the total weight of things sold by khichdi kirana store last month?(excluding the weight of soapcake.)
2. What is the total weight of soap cake in kilogram sold last month?
3. How much amount of money did kirana store get by selling sugar and tea?
4. How much amount did Kirana store get by selling salt and chilli?

Example 1 The population of Talwara city was 3, 38,401 in 2001. It was Increased by 88765 upto year 2011. What was the population of the city in the year 2011?

Solution The population of Talwara in the year 2011=Population in 2001 + increase in population

=3,38401+88765 =
=4,27,166 =

```
  3,38,401
+ 88,765
----------
  4,27,166
```

Example 2 One newspaper contains 18 pages.10,03,912 copies are printed daily. Find out how many pages are printed every day?

Solution Number of copies printed everyday =10,03,912 Therefore number of pages printed daily would be

= 10,03,912 × 18
= 1,80,70,416

```
  10,03,912
X       18
----------
  8031296
 1003912X
----------
 18070416
```

Example 3 In the state, scholarships were given to 12,38,792 students for session 2014-15. 17,92,304 students got scholarships for the session2015-16. Find out in which year more scholarships were given and by how much?

Solution Scholarships provided in session 2015-16
(The number 12,38,792 is greater than the number 17, 92, 304)
Increase in scholarships in 2015-16
= (Scholarships given in 2015-16) – (Scholarships given in 2014-15)

```
  17,92,304
- 12,38,792
-----------
   5,53,512
```

= 17, 92, 304 - 12,38,792 = 553512
Therefore there was an increase of 5,53,512 students getting scholarships in session 2015-16.

Example 4 There are 15,07,150 matchsticks made daily in a matchsticks company. If there are 50 matchsticks in a matchbox, find out how many matchboxes will be required for 15,07,150 matchsticks?

Solution There are 50 matchsticks in a matchbox
Therefore matchboxes required for 15,07,150 matchsticks.
=15,07,150 ÷ 50
=30143

```
      30143
   ┌─────────
50 ) 1507150
     −150
     ------
      00071
       −50
      ------
        215
       −200
      ------
         0150
        −150
      ------
          000
```

Therefore for keeping 15,07,150 matchsticks we need 30143 matchboxes.

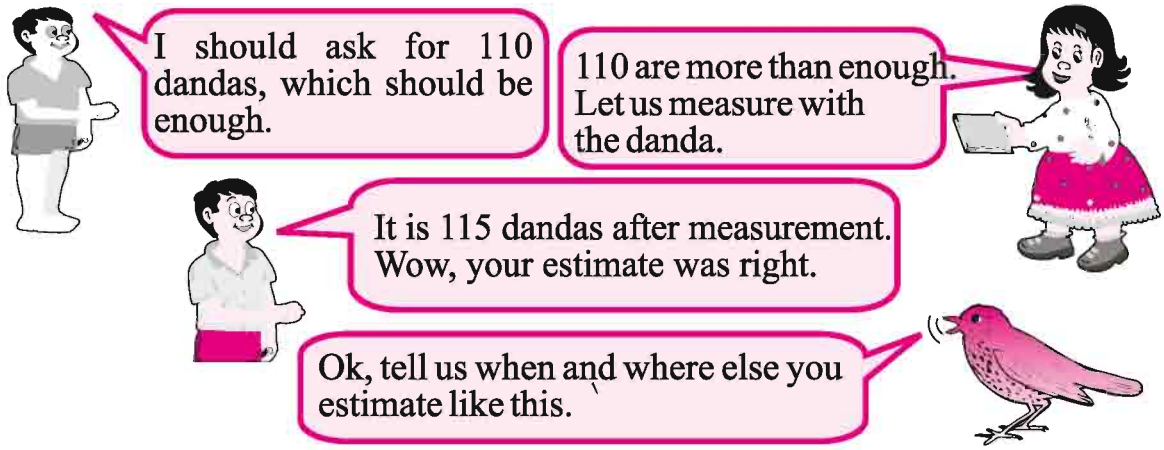
Exercise 1.2

1. Fill in the blanks:
   (i) 1 thousand=.....tens (ii) 100 lakhs=..... crore
   (iii) 1 kg=.....grams (iv) 100 cm=..... meter
   (v) 1 km=..... meter (vi) 1 litre=..... millilitre
2. The winning candidate got 6,42,312 votes in Loksabha elections. He beat his nearest rival by 65,318 votes. Find out how many votes did the nearest rival get.
3. In the first four days, the Dashehra Mela was visited by 3079, 5768, 9014 and 12,306 people respectively. Find out how many people in all turned up to visit the Mela in the four days.
4. A cricketer made 15030 runs in Test Cricket and 18999 runs in One day Cricket. How many runs were made in both types of games?
5. Find the difference between the biggest and smallest numbers obtained by using all the digits 5, 3, 9, 7, 4 once.
6. Members of a self-employment group make 1385 Papads daily. How many Papads would they make in August?
7. An airplane travels 685 kilometers in an hour. How much distance would it cover in 36 hours?
8. A trader paid Rs. 18,57,750 for buying 150 television sets. Find out the cost of one television set.
9. A student multiplied 5068 with 36 instead of 63. Find out the difference in both answers.
10. 75000 sheets of paper are available for making Practice books. From every sheet, 8 pages of Practice book are made. Every Practice book has 200 pages. How many Practice books can be made from the available sheets of paper?

11. There are 15 litre of milk available in a hotel. If 25 ml milk is required for making a cup of tea, how many cups of tea can be made from 15 litre of milk?

1.6 Estimation

Mitesh, Manali, Devansh and Charvi are playing gilli-danda. Mitesh and Manali are in one team, and Devansh and Charvi are in the other team. Mitesh hit the gilli by danda. Mitesh and his friend estimated the distance between gilli and the gachh (guppi).



Do and learn:

Take various kinds of things in your hand (wheat, corn, soyabean, pebbles etc) and ask your friend to estimate the number. Now count it. Divide into groups of 4 in your class, and estimate their weights and fill it in the following

S.N.	Name of Student	Estimated Weight	Actual Weight
1			
2			
3			
4			

Now weigh the children on weighing machines and find out

- How many of you guessed the correct weight?
- How many of you guessed the weight close to the actual weight?
- How many of you guessed the weight not close to the actual weight?

Like this discuss with your friends and guess the:

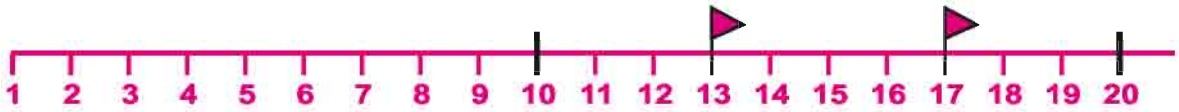
- Estimated distance of the school from your house is .....m/km
- Estimated length of classroom is..... feet, width is.....feet.
- Estimated number of books in the library is ..... .

1.7 Rounding Numbers

Imagine that there is the wedding of your elder brother or sister in your home. Now we would try to find out how many guests would come. Can we find out the exact number of guests? It is not practically possible.

Think about the situations where we work with the rounded off number and when we need the exact number.

1.7.1 Rounding numbers to the nearest tens



Which flag is closer to 10?

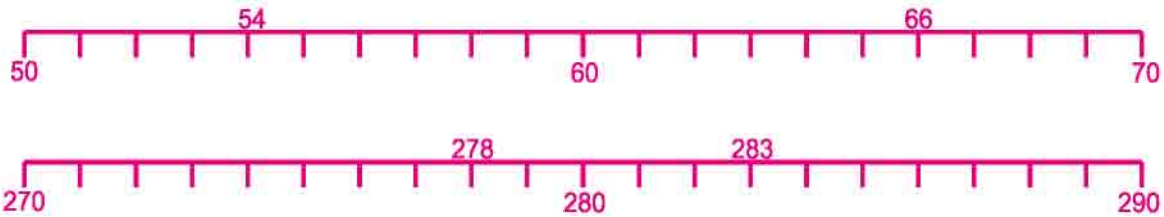
Which flag is closer to 20?

Number 13 is between number 10 and 20 but 13 is closer to number 10. Therefore we round off 13 to 10 to the nearest tens.

While rounding numbers we observe that numbers 1, 2, 3, 4 are closer to the number 0, as compared to the number 10. Hence we round them off to number 0. And 6, 7, 8, 9 are closer to the number 10 so we round them to number 10.

Number 5 is equidistant to number 0 and 10. Generally number 5 is rounded off to number 10.

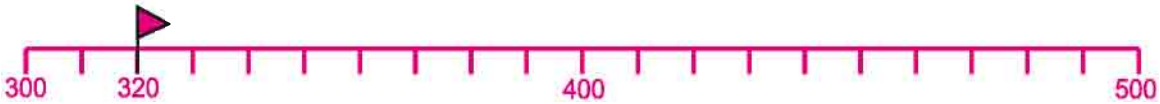
How do we round off the numbers written on the number line?



Are 278 and 283 both rounded off to 280? Why?

1.7.2 Rounding to the nearest hundreds

Think about the number 320 on the number line. It is close to which number?



Number 320 is closer to number 300, hence number 320 is rounded off to 300 as the nearest hundreds.

To round off number 5437 to the nearest tens, observe its units place. It is greater than 5 hence number 5437 is rounded to 5440 to the nearest tens. Likewise number 5437 would be rounded to the nearest hundreds as 5400 because when we focus on its tens place, we have number 3 which is less than 5. Therefore it is closer to number 400. Hence it nearest rounding to hundred is 5400.

Let's understand

48 upto tens = 50
682 upto hundreds = 700
335 upto hundreds = 300
2907 upto hundreds = 2900

1.8 Understanding brackets

Jagrati bought 5 copies from the market of price value Rs. 10 each. Her friend Himani bought 9 copies of same price. Find out the total cost of the copies paid by both of them?

Jagrati said = 5 x 10 + 9 x 10
= 50 + 90
= 140 Rs.

Himani said = 5 + 9 x 10
= 5 + 90
= 95 Rs.

Can you tell us whose calculation is wrong?

Teacher: For this kind of problem we use brackets.
What Himani calculated is wrong.
We write 5+9 in one bracket and the calculate it. Like this:
(5 + 9) = 14
14 x 10 = 140
use of brackets tell us that those quantities which are inside the brackets are solved first and then we perform outer operations .

Learn these

9 + 1 = 10
99 + 1 = 100
999 + 1 = ...
9999 + 1 = ...
99999 + 1 = ...
999999 + 1 = ...
9999999 + 1 = 1,00,00,000

10 X 10 = 100
100 X 10 = 1000
1000 X 10 = 10,000
10,000 X 10 = 1,00,000
1,00,000 X 10 = 10,00,000
10,00,000 X 10 = 1,00,00,000

Identify the pattern

$0 \times 9 + 1 = 1$
$1 \times 9 + 2 = 11$
$12 \times 9 + 3 = 111$
$123 \times 9 + 4 = 1111$
$1234 \times 9 + 5 =$ .....
.....
.....

$9 \times 9 + 7 = 88$
$98 \times 9 + 6 = 888$
$987 \times 9 + 5 = 8888$
$9876 \times 9 + 4 = 88888$
$98765 \times 9 + .. =$ .....
.....
.....

Exercise 1.3

1. Replace each number to the nearest hundred of the following and calculate the answer again in the nearest hundred.
   (I) 247+691 (ii) 4316+1567 (iii) 7122-3565 (iv) 4543-2036
2. Multiply the nearest tens numbers of the following:
   (I) 34 x 57 (ii) 294x72 (iii) 869x675
3. In the school library, there are 2541 books of stories, 1017 subject books and other books are 857.Find out the approximate number of books in the school. (Rounding the number to 100.)
4. 8596 cows and 7015 buffaloes are there in a village. Find out which cattle is more than the other and how much? (Rounding the number to 100.)
5. A car runs 15 kilometer with 1 litre petrol. How much petrol does it need to go 100 kms?(Find out the value rounding the number to 10)

We learnt

1. Between two numbers..., the number which has more digits is greater. If number of digits is same in the both, then we compare the first digit on the left of both numbers. In which number this digit is greater, that will be the greater number. If this digit is also same then we compare further digits from left to right.
2. While forming of a greatest number, we write digits in descending order from left to right and for smallest number we write digits in ascending order from left.
3. The largest number of four digit is 9999 and the smallest number of five digit is 10,000.
4. Use of commas helps in writing and reading numbers. In Indian statics, first comma is used after the third digit from right, then others after the gap of two-two digits. In international method of statics, comma is used after every three digit from the right.
5. Several times we do not need the exact numbers, only estimated numbers are enough.
6. Likewise several times estimation of the calculation is also enough useful. For this,we first round off the number to its nearest and then get a quick result.