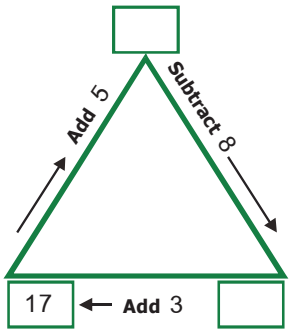
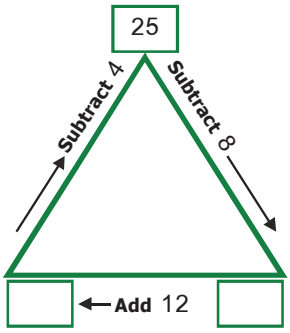
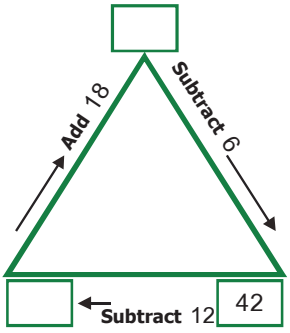
UNIT 2

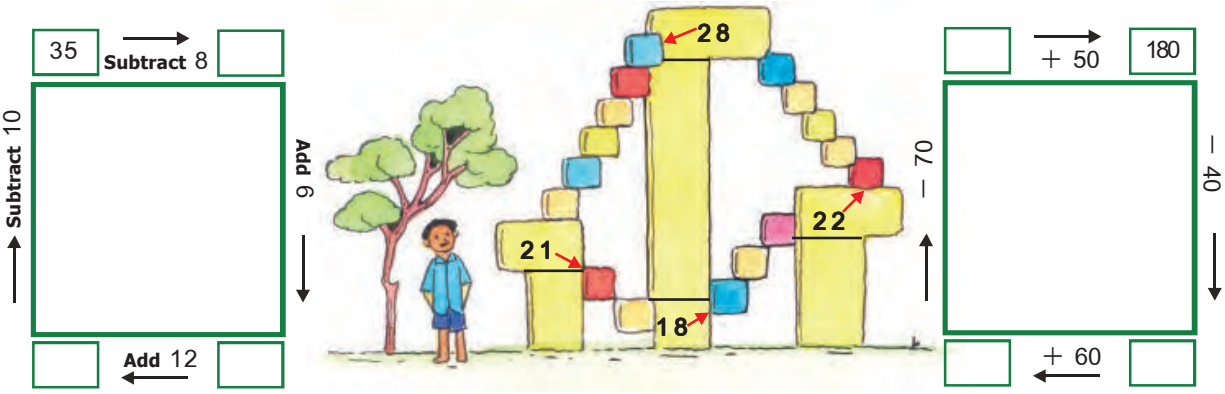
ADDITION & SUBTRACTION

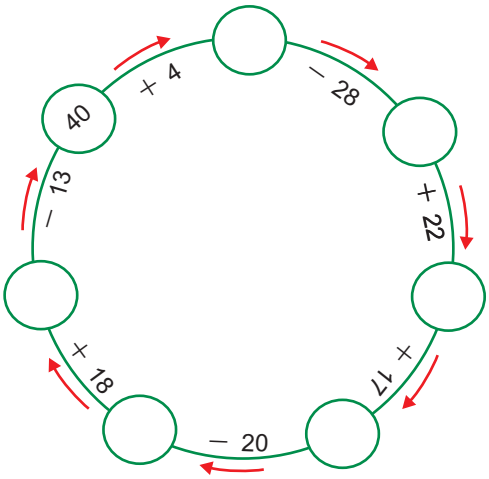
Write numbers in the boxes as shown.

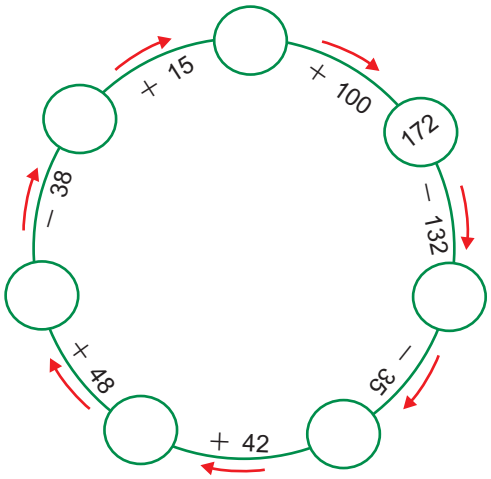












Understand the pattern and proceed.

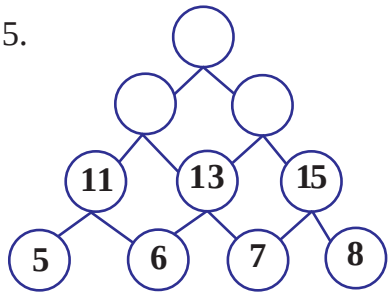
1.
1+2+3 = 6
2+3+4 = 9
3+4+5 = 12

2.
1+2+3 = 6
4+5+6 = 15
7+8+9 = 24

3.
2+4+6 = 12
8+10+12 = 30

4.
1+3+5 = 9
7+9+--- =

5.



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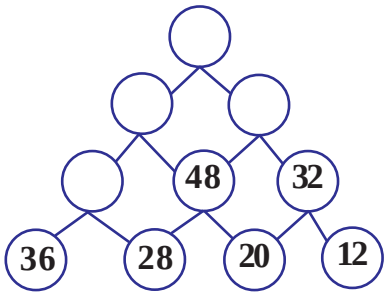
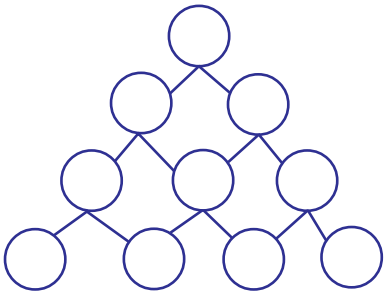
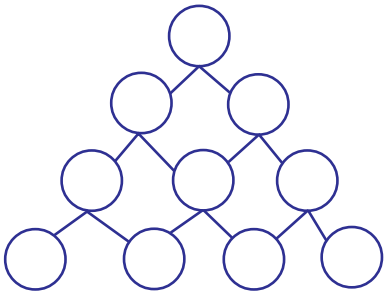


In the same way you also make two patterns :-





Number game:

Select any number from the table. Do calculation using other numbers from the table to get the number you have selected :-

43	12	69	5	51	85
24	45	**64**	49	36	59
16	15	10	19	73	34
14	6	7	28	52	31
38	13	21	43	4	60
79	90	32	17	9	40

By selecting the number 64 you find the number in this way:

$60 + 4 = 64,$

$73 - 9 = 64,$

$69 - 5 = 64$

- Add numbers the result of which will be 34.
- Subtract numbers the result of which will be 34.

Some answers are given below. Form questions from these numbers:

- Answer is 35
- Answer is 44
- Answer is 21
- Answer is 12

If the answer is 18 then the question may be as follows

- What will you get by adding 9 to 9 ?
- One basket carries 9 mangoes. How many mangoes will be there in such two baskets?
- What is the answer of 25 - 7 ?
- What is two times of 9 ?
- $9 \times 2 =$ .....

Add and subtract in the following boxes

+	731	605	615
210	(941)		
318			
605			

−	881	7005	6382
613		(6392)	
780			
103			

Make questions:

Example-

	5	0			2	5	
−	2	5		+	1	0	
	2	5	<		3	5	

									1	4	
−				+				−			+		
	4	8	>					3	8	=		
	9											
−				+				−			+		
	7	8	>		9			2	7	<		3	

See the table and give the answers:

221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260

How much more is 231 than 221 ——————————

How much more is 241 than 231 ——————————

How much more is 251 than 241 ——————————

How much more is 243 than 242 ——————————

How much more is 244 than 243 ——————————

How much more is 245 than 244 ——————————

Follow the same pattern and find their difference:

Select any one number from the table. Add two numbers from below. Now add the two numbers from its left side. In the end find out the difference between the sum of these two numbers.

Example :

If you select 237 then the sum of two numbers247 + 257 = 504 and the addition of the left side number = 236 + 235 = 471. The difference between 504 and 471 i.e 504 - 471 = 33

Do the same with three more numbers. Is there anything special in the answer. Why does this happen?

The question given below are solved by Rahul and Riya. Tell who has solved the questions correctly. Write his/ her name in the box.

712+18, 216 + 17, 762−176, 800−191

The question done by Rahul

```
   7 1 2
+    1 8
-------
   7 2 10
     1
   2 1 6
+    1 7
-------
   2 3 3
-------
```

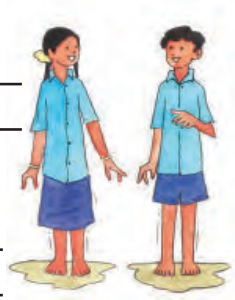
The questions done by Riya

```
     1
   7 1 2
+    1 8
-------
   7 3 0
-------

   2 1 6
+ 1 7
-------
   3 8 6
-------
```

	7	6	2			7	6	2
−	1	7	6	−		1	7	6
	5	8	6			6	1	4

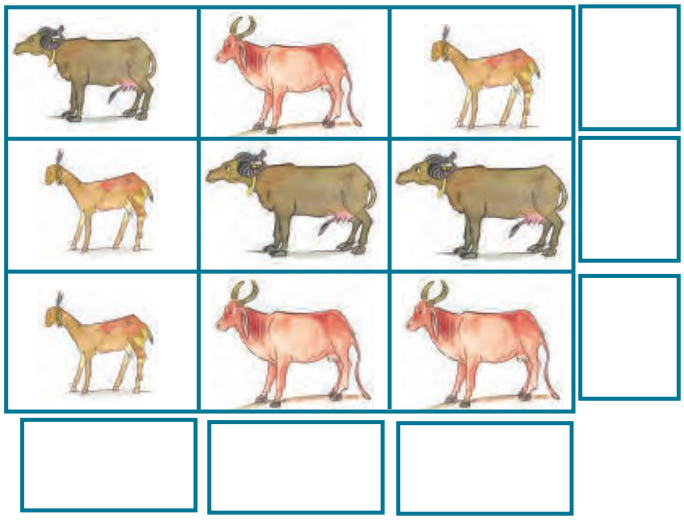
	8	0	0			8	0	0
−	1	9	1	−		1	9	1
	6	0	9			7	9	1



Discuss with your friends who has made the mistakes and where?

How much price ?

The price of a buffalo is Rs 5000/- . The cost of a cow is Rs 3000 and the cost of a goat is Rs 1000. See the picture and say:



1. Add the cost of all the animals in each column and write the answers in the blank box.
2. Write the total cost of the cows in the given box.
3. Tell the total cost of two cows and two goats.
4. Tell the total cost of 1 cow and 3 goats.
5. How many goats can be purchased in the price of one buffalo?
6. Shalu purchased one cow, one buffalo and one goat. After that she had sufficient money to purchase a goat. Tell how much money she had.

Add in expanded form

Example : Add 3453 to 5286.

3453 = Three thousand + Four hundred +Five tens + Three ones

3453 = 3000 + 400 + 50 + 3

In this way

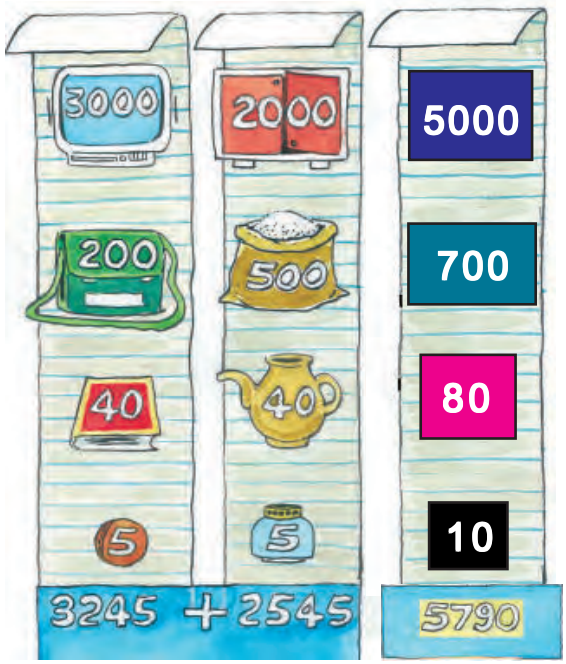
5286 = 5 thousands + 2 hundreds + 8 tens + 6 ones

= 5000 + 200 + 80 + 6

Thus

	3453	=	3000	+	400	+	50	+ 3
+	5286	=	5000	+	200	+	80	+ 6
			8000	+	600	+	130	+ 9

Therefore 8 Th + 6 Hundreds + 13 Tens + 9 Ones
Or 8 Th + (6+1) Hun + 3 Tens + 9 Ones
Or 8 Th + 7 Hun + 3 Tens + 9 Ones



Example : Add 6875 to 2749

6875 = 6000 + 800 + 70 + 5
2749 = 2000 + 700 + 40 + 9
8000 + 1500 + 110 + 14

8 Th +15 H + 11 T +14 Ones
Or 8 Th + 15 H + 12 T + 4 Ones
Or 8 Th + 16 H + 2 T + 4 Ones
Or 9 Th + 6 H + 2 T + 4 Ones

The sum is 9624

Brief form :

```
  1 1 1
  6 8 7 5
+ 2 7 4 9
-------
  9 6 2 4
-------
```

Write the answers in expanded form :

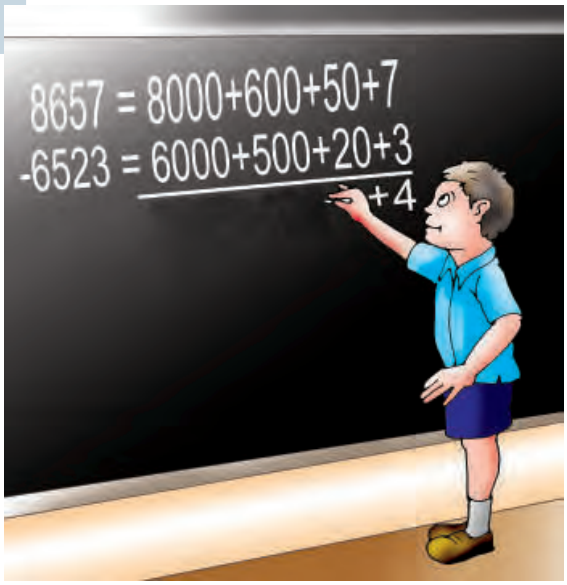
1. 2721 and 2620
2. 3510 and 2410
3. 4618 and 3206
4. 7390 and 2000
5. 5881 and 2830
6. 8215 and 1037

The difference in expanded form

Example : The difference of 8657 and 6523

8657 = 8000 + 600 + 50 + 7
− 6523 = 6000 + 500 + 20 + 3
2000 + 100 + 30 + 4

2 thousand + 1 hundred + 3 tens and 4 ones



Example : Subtract 4875 from 6324.

6324 = 6000 + 300 + 20 + 4
− 4875 = 4000 + 800 + 70 + 5
1000 + 400 + 40 + 9

5000 1000 200 100 10 10

1 Th + 4 Hun + 4 Tens + 9Ones = 1449

Thus

$$\begin{array}{r} 6324 \\ -\ 4875 \\ \hline 1449 \end{array}$$

Subtract in expanded form :

1. 2100 from 6301 2. 3000 from 5810 3. 4210 from 5380
4. 4000 from 5000 5. 6000 from 6000 6. 1037 from 8215

Addition of numbers having 3 digits :

Example :

Add **147**, **253** and **268**

	H.	T.	O
		1	
	1	4	7
+	2	5	3
+	2	6	8
			8

	H.	T.	O
	1	1	
	1	4	7
+	2	5	3
+	2	6	8
		6	8

	H.	T.	O
	1	1	
	1	4	7
+	2	5	3
+	2	6	8
	6	6	8

Brief form :

	1	1	
	1	4	7
+	2	5	3
+	2	6	8
	6	6	8

Solve these :

1.

	1	2	7
+	2	1	0
+	2	4	2

2.

	1	2	4
+	2	6	7
+	7	1	3

3.

	1	4	5
+	2	4	6
+	1	3	2

4.

	1	1	5
+	1	0	6
+	7	0	3

Number 1 to 100 are written in these boxes.

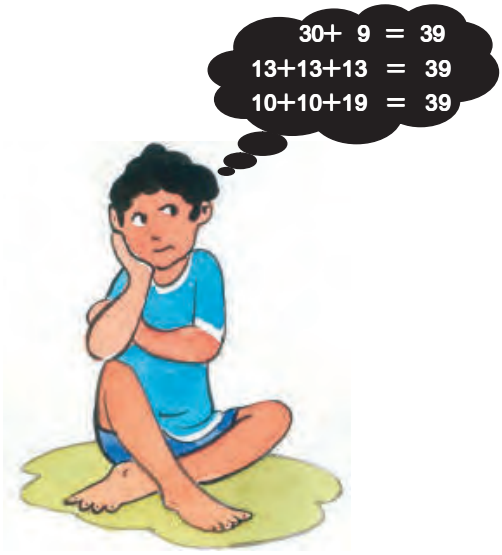
In number 13, the sum of both the digits 1+3 = 4. In the same way, in number 57 the sum of both the digits is 5+7 = 12 and 1+2 = 3.

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

Now in these boxes write the sum of the digits & complete the square.

		4							
						3			

Do you find some order in these numbers written in squares?



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Write three numbers, the sum of which is 125 -

27	+	50	+	48	=	125
	+		+		=	125
	+		+		=	125
	+		+		=	125
	+		+		=	125

Solve these questions -

1. There are 438 students in Patel Para School. Out of which 198 are girls. What is the number of boys in the school ?
2. In a garden, there are 245 mango trees, 368 guava trees and 154 papaya trees. What is the total number of trees in the garden ?
3. In a school there are 435 Hindi books, 412 Maths books and 138 English books. Write the total number of books.
4. One boy purchased a copy containing 360 pages. He wrote on 272 pages in a few days. How many pages are blank ?
5. Hindi, Mathematics and English books contain 368, 370 and 205 pages respectively. Find the total number of pages.
6. In an election of the gram panchayat first candidate got 638 votes, the second candidate got 758 votes and was elected. Say, the candidate was defeated by how many votes?
7. 352 and 256 guavas were plucked from two different gardens. Tell, How many more guavas were plucked from first garden?

The addition of 4 digits numbers :

Example : Add 4538 and 3485.

	T.	H.	T.	O
	(1)	(1)	(1)	
	4	5	3	8
+	3	4	8	5
	8	0	2	3

Solve these-

1. 4385 + 2876 =

2. 5738 + 2575 =

3. 3475 + 3687 =

4. 6346 + 282 =

5. 3436 + 208 =

6. 5785 + 3512 =

7. 7213 + 2587 =

8. 1111 + 1199 =

9. 5789 + 3122 =

10. 4747 + 4363 =

11. 689 + 4678 =

12. 7172 + 938 =

The subtraction of 4 digit number:-

Example : Substract 6853 from 8327

	T.	H.	T.	O
	~~8~~ 7	~~3~~ 12	~~2~~ 12	7
−	6	8	5	3
	1	4	7	4

Solve these-

1. 5078 − 2784

2. 7981 − 2503

3. 5672 − 3240

4. 3563 − 2706

5. 6230 − 2451

6. 2508 − 1392

7. 5643 − 2154

8. 9634 − 5071

9. 5000 − 2550

10. 7111 − 5222

11. 4444 − 2165

12. 8100 − 7899

The population of 3 villages are in written below :

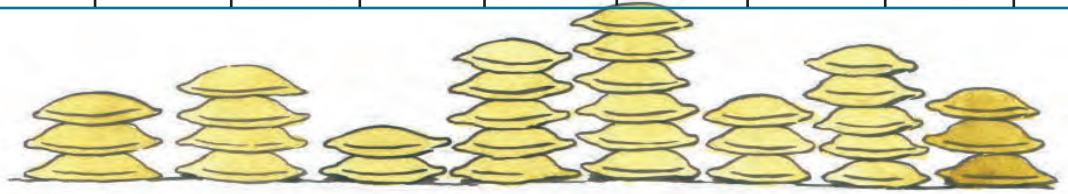
	Ladies	Men	Boys	Girls
Bhanupratappur	4134	3975	1152	987
Basna	3412	3116	1017	1075
Abhanpur	3532	3580	875	915

See this table and answer the questions :-

1. How many people live in Bhanupratappur ?
2. In Basna how many men are less than women ?
3. How many boys live in Bhanupratappur and Basna ?
4. What is the total number of boys and girls in Abhanpur ?

See the picture and tell :

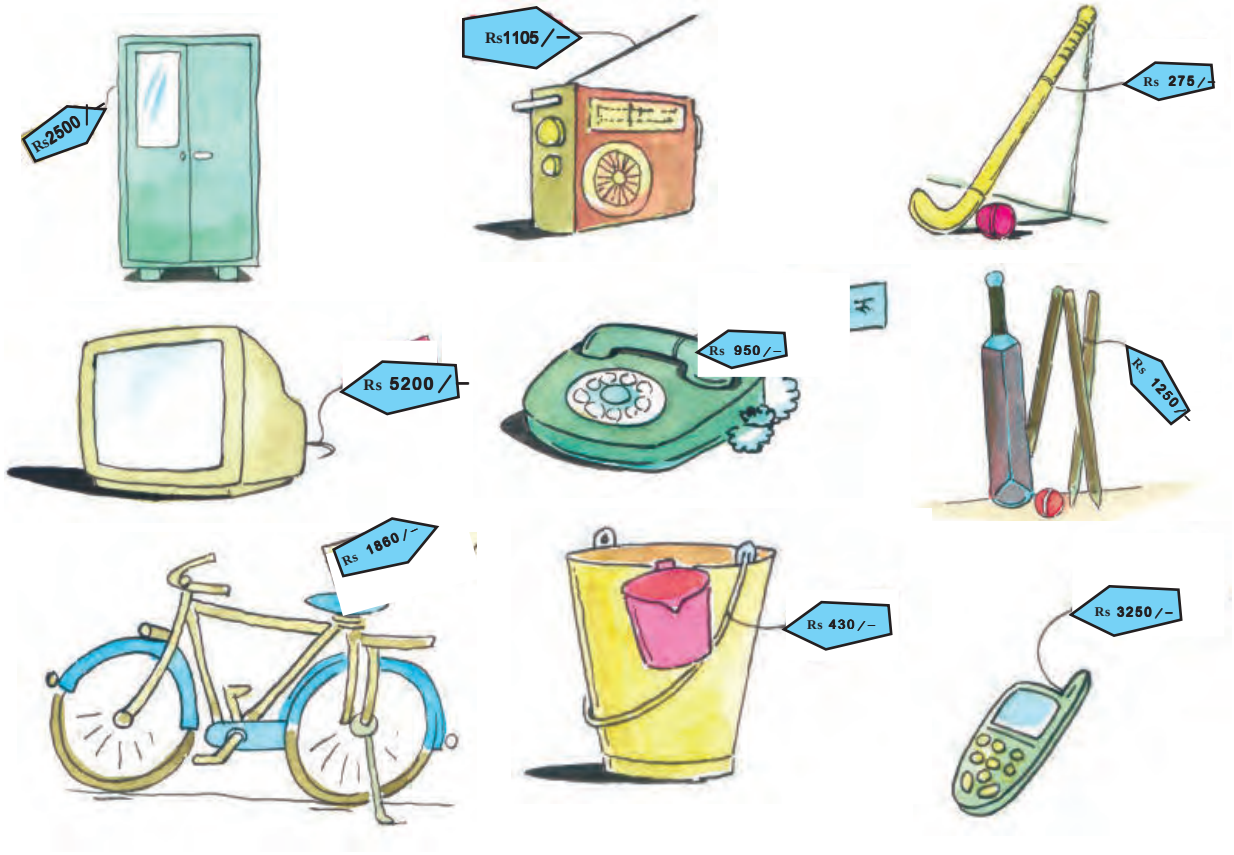
Edible things	Wheat	Rice	Maida	Sugar	Salt	Rawa	Peas	Paddy
In a Bag	75 kg	50 kg	50 kg	50 kg	40 kg	40 kg	75 kg	75 kg



Maida. Rice Sugar Wheat Paddy Rawa Peas Salt

- What is the total weight of Rawa ?
- What is the total quantity of 4 sacks of rice and 3 sacks of salt?
- How much is the weight of the sacks of Rawa less than the weight of the sacks of maida ?
- Among given edible things, which are equal in weight?
- What is the total weight of 1 sack of maida and 2 sacks of rice?
- Among the above edible things given which has the maximum and minimum weight ?
- The total number of sacks of all the edible things.

See the picture and say who has spent how much money to purchase things at the following price :



Harpal purchased cycle and T.V. ( )
Dinesh purchased bat ball, radio and mobile. ( )
Raju purchased bucket and mug, almirah and telephone. ( )
Salma purchased hockey stick, radio and mobile. ( )
Reeti purchased bucket, mug, radio and almirah. ( )

If every person has Rs. 9,500 then what amount of money would be left with each one?

Now tell -

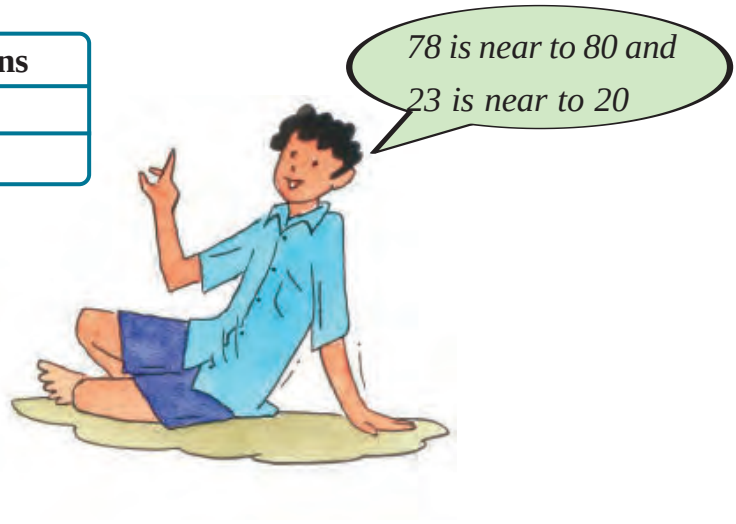
1. Who has spent more: Harpal or Dinesh ?
2. Who has spent more: Dinesh or Reeti ? By how much ?
3. What is the total amount spent by Raju and Salma both?
4. How much less was spent by Salma than Harpal ?

Now you ask your friends about their favourite things and find out their cost.

Calculation based on Addition:

Example 1: There are 78 marbles in a bag and 23 in another bag. If you add marbles from both the bags, then calculate the total number of marbles. Before calculating 78 + 23 first, find the nearest tens value of 78 and 23 and add them.

Number	Nearest Tens
78	80
23	20



Celculated Total

80
+ 20
100

Actual Total

78
+ 23
101

Thus on adding marbles of both the bags. We get about hundred marbles. Therefore the difference between the calculated number (100) and actual number (101) is only 1.

Example 2: In primary school , 172 boys and 121 girls are registered. Calculate the total number of students in the school?

Before calculation, find out the nearest value of 172 and 121 and add them:

First find the nearest thousand valve of Rs. 3725 and Rs. 1650.

Number	Nearest Hundred
172	200
121	100

Calculated Total –

$$\begin{array}{r} 200 \\ +\ 100 \\ \hline 300 \end{array}$$

Actual Total–

$$\begin{array}{r} 172 \\ +\ 121 \\ \hline 293 \end{array}$$

Thus the calculated total of the students is 300 which is very near the actual total 293.

Example 3: Raju went to market to purchase a portable T.V. and fan. Their cost are Rs. 3725 and Rs. 1650. Now you tell, nearly how much amount of money should Raju carry?

First find the nearest thousand value of Rs. 3725 and Rs. 1650.

Number	Nearest Thousand
3725	4000
1650	2000

Calculated Total

$$\begin{array}{r} 4000 \\ +\ 2000 \\ \hline 6000 \end{array}$$

Actual Total

$$\begin{array}{r} 3725 \\ +\ 1650 \\ \hline 5375 \end{array}$$

Therefore Raju should carry Rs. 6000 to market for both the market.

Now tell the calculated and the actual total

Hint–

- If the number is of two digits then of nearest Tens.
- If the number is of three digits then of nearest Hundred.
- If the number is of four digits then of nearest Thousand.

1.	47, 81	2.	67, 32	3.	97, 15	4.	72, 138
5.	8251, 1310	6.	5371, 3800	7.	7214, 1818	8.	632, 225
9.	5990, 4137	10.	265, 381	11.	703, 581	12.	6410, 3817

Methods of Vedic Maths

You have already learnt addition, subtraction, multiplication and division. There are a few simple and interesting methods for this processes in Vadic Maths also. Here we will introduce them to you. Before knowing about these methods let us get acquainted with digits.

Digits (Ank)- 0,1,2,3,4,5,6,7,8,9. These are the ten digits. All the numbers are written using these digits.

Bijank- In Vedic Maths digits from 1 to 9 are called Bijank. To find out the Bijank of any number, the digit of the number are added till a single digit number is obtained.

For example –

To find out the Bijank of 35, we will add its digits.

3 + 5 = 8

So the Bijank of 35 is 8

Similarly -

Bijank of 97

9 + 7 = 16 but 16 has 2 digits So we will add these digits also

1 + 6 = 7

So the Bijank of 97 is 7

Param Mitra Ank –

Any 2 digits whose total is 10 are called Param Mitra of each other.

For example –

1 + 9 = 10

So 1 is Param Mitra of 9

and 9 is Param Mitra of 1

Now let's practice it a bit

Exercise

Q. 1 - What are the digits that are used for writing numbers?

Q. 2 - Write the Bijank of following numbers.

(i) 12 (ii) 15 (iii) 17 (iv) 19 (v) 37

(vi) 44 (vii) 56 (viii) 67 (ix) 96 (x) 183

Q. 3 - Write the Param Mitra number of the following numbers.

(i) 2 (ii) 3 (iii) 4 (iv) 5

Ekadhiken Poorven–

The meaning of Ekadhiken Poorven is take one more than the previous number.

For example -3 is the ekadhik of 2

Similarly - 4 is the ekadhik of 3

Can you tell the ekadhik of each digit from 1 to 9 ?

Eknyunen Poorven –

The meaning of EkNyunenPoorven is take one less than the previous number.

For example - 7 is eknyun of 8, Similarly 4 is eknyun of 5

Now you tell the eknyun of all the digit from 1 to 9.

In the methods of Vedic Maths, Ekadhiken Poorven and Eknyunen Poorven are used at many places.

Now tell –

What numbers will you get from the following numbers by doing its Ekadhik twice?

(i) 22 (ii) 43 (iii) 30 (iv) 58

Sometimes it is necessary to do Ekadhik or Eknyun more than once.

For example –

We get 13 by doing Ekadhik of 12 and 14 when we again do Ekadhik of 13 that is get 14 when we do Ekadhik of 12 twice.

Now lets do Eknyunen of 12 twice.

We get 11 by doing Eknyun and 10 when we again do Eknyun of 11 we get 10 that is when we do Eknyunen of 12 twice.

What numbers we will get when we do Ekadhik of these numbers thrice?

(i) 23 (ii) 15 (iii) 36 (iv) 42

Choose some numbers on your own and practice Ekadhik of these numbers.

Now tell –

What numbers will you get by doing EkNyunen twice?

(i) 16 (ii) 30 (iii) 67 (iv) 75

What numbers will you get from these numbers by doing EkNyunen thrice?

Choose some numbers on your own and practice doing Eknyun twice or thrice.

Addition with the help of Param Mitra.

If we have to add 1,2 or 3 to any digit, we can do it by doing Ekadhik as per need. But if both the digits are greater than 5, it is easy to add with the help of Param Mitra.

Lets, look at an example.

```
   9
 + 7
 ———
```

Here we have to add 9 and 7. Param Mitra Ank of 9 is 1.

So we taken 1from 7 and add it to 9.

Now 9 + 1 = 10

And taking out 1 from 7 makes it 6. By adding 6 to 10, we get 16

i.e.

```
   9
 + 7
 ———
  16
```

Similarly practice addition with the help of Param Mitra.

(i) 7 + 8 (ii) 8 + 6 (iii) 9 + 8 (iv) 6 + 9

In a similar way, take two digits greater than 5 and try adding them with the help of Param Mitra.