



Mathematics

2



Sindh Textbook Board, Jamshoro

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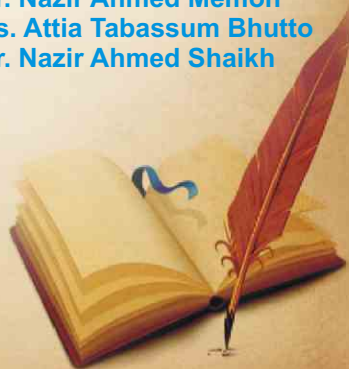
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CONTENTS

Units	Description	Page No.
1	NUMBERS	1
2	NUMBER OPERATIONS	31
3	MEASUREMENT OF LENGTH, MASS AND CAPACITY	92
4	TIME	103
5	GEOMETRY	114

PREFACE

The Sindh Textbook Board is an organization charged with the preparation and publication of textbooks in the province of Sindh. Its prime objective is to develop and produce textbooks which are conducive to equip the new generation with the knowledge and acumen to prepare them to face the challenges of the rapidly changing environment. In this age of knowledge explosion and development of technology not witnessed in the human history, efforts have to be made to ensure that our children do not lag behind. The Board also strives to ensure that Universal Islamic Ideology, culture and traditions are not compromised in developing the textbooks.

To accomplish this noble task, a team of educationists, experts, working teachers and friends endeavor tirelessly to develop, text and improve contents, layout and design of the textbooks.

An attempt has made in this textbook to provide horizontal and vertical integration. The efforts of our experts and production personnel can bring about the desired results only if these textbooks are used effectively by teachers and students. Their suggestions will help us in further improving the qualitative contents of textbooks.

Chairman
Sindh Textbook Board

NUMBERS

NUMBERS

Ordinal Numbers

Write ordinal numbers from first to twentieth

We already know to identify the position of objects by ordinal numbers. Let us revise the ordinal numbers.



Activity 1 Colour first, third and fifth positions in red.



Activity 2 Write the missing ordinal numbers.

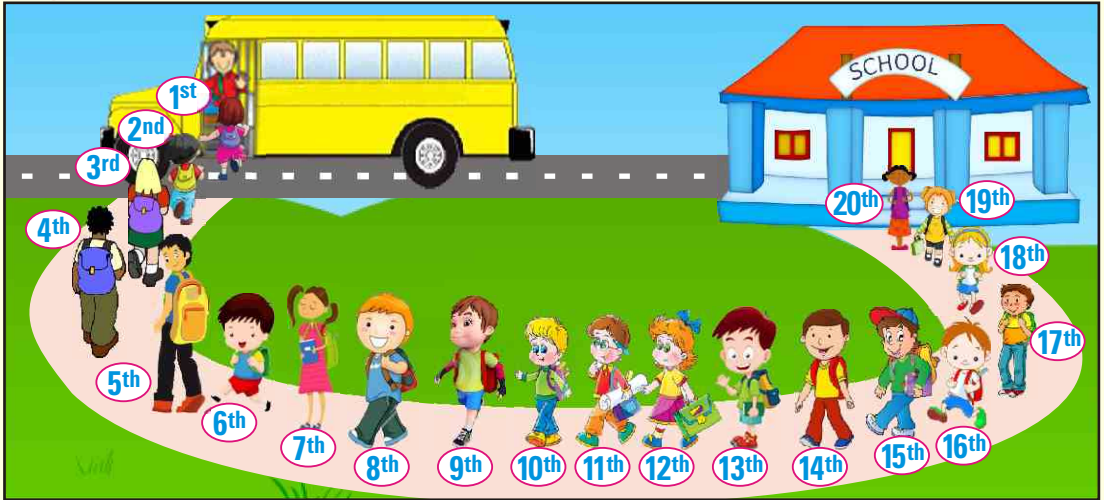


Teacher's Note

Teacher should revise and do more practice of ordinal numbers by using students in the class. For example rows/columns of students books, benches/chairs etc.



Activity 1 Read the positions of the following students.



Activity 2 Read and trace the following ordinal numbers.

Ordinal number (in words)	Ordinal number (in figures)	Ordinal number (in words)	Ordinal number (in figures)
First	1 st	Eleventh	11 th
Second	2 nd	Twelfth	12 th
Third	3 rd	Thirteenth	13 th
Fourth	4 th	Fourteenth	14 th
Fifth	5 th	Fifteenth	15 th
Sixth	6 th	Sixteenth	16 th
Seventh	7 th	Seventeenth	17 th
Eighth	8 th	Eighteenth	18 th
Ninth	9 th	Nineteenth	19 th
Tenth	10 th	Twentieth	20 th

Teacher's Note





Teacher should do practice of ordinal numbers from 1st to 20th by using flash cards of ordinal numbers in the class.

Exercise 1





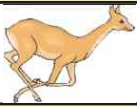



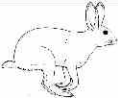



Read the position of animals:



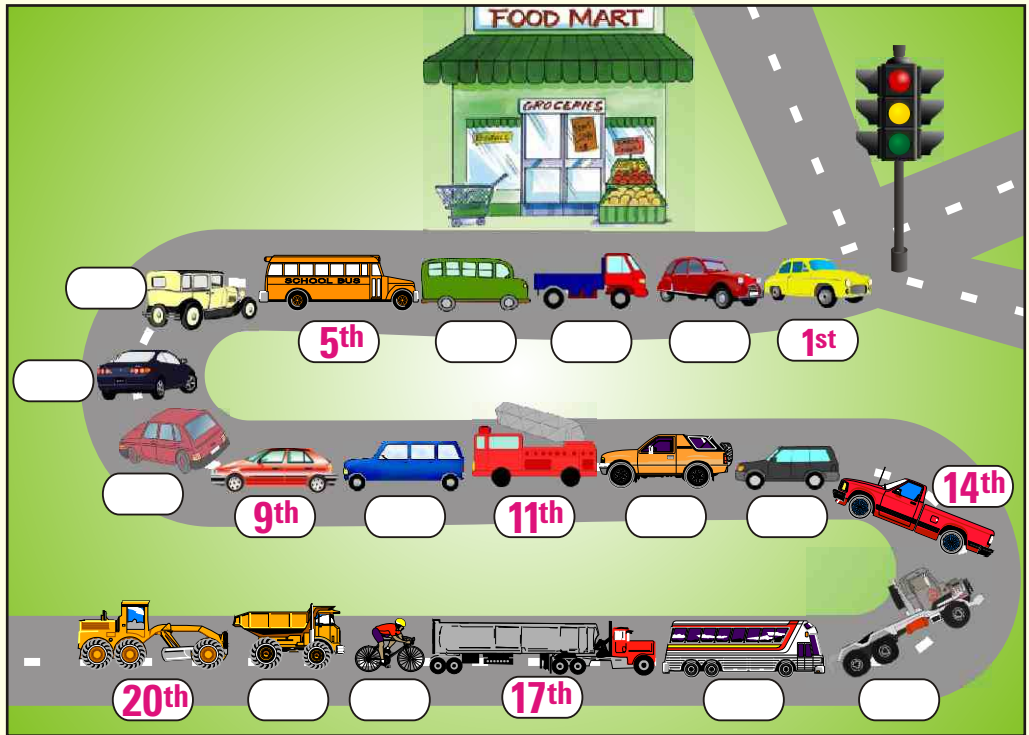
(1) Tick (✓) the position of animals shown in the above picture:

Animal	Position		
	6 th	7 th ✓	8 th
	3 rd	4 th	5 th
	5 th	6 th	7 th
	6 th	7 th	8 th









(2) Write the position of animals shown in the above picture:

			
1 st			
			
			

(3) Write the missing positions of vehicles:



(4) Write the ordinal number of vehicles in figures and words according to the position shown in the above picture:

Vehicle	Position	
	In figures	In words
	2 nd	Second
		
		
		
		
		
		
		

Numbers in words

Write numbers 1 – 100 in words



Activity 1 Read and trace the numbers 1–50 in words.

In figures	In words	In figures	In words
1	One	26	Twenty six
2	Two	27	Twenty seven
3	Three	28	Twenty eight
4	Four	29	Twenty nine
5	Five	30	Thirty
6	Six	31	Thirty one
7	Seven	32	Thirty two
8	Eight	33	Thirty three
9	Nine	34	Thirty four
10	Ten	35	Thirty five
11	Eleven	36	Thirty six
12	Twelve	37	Thirty seven
13	Thirteen	38	Thirty eight
14	Fourteen	39	Thirty nine
15	Fifteen	40	Forty
16	Sixteen	41	Forty one
17	Seventeen	42	Forty two
18	Eighteen	43	Forty three
19	Nineteen	44	Forty four
20	Twenty	45	Forty five
21	Twenty one	46	Forty six
22	Twenty two	47	Forty seven
23	Twenty three	48	Forty eight
24	Twenty four	49	Forty nine
25	Twenty five	50	Fifty


Activity 2 Read and trace the numbers 51–100 in words.

In figures	In words	In figures	In words
51	Fifty one	76	Seventy six
52	Fifty two	77	Seventy seven
53	Fifty three	78	Seventy eight
54	Fifty four	79	Seventy nine
55	Fifty five	80	Eighty
56	Fifty six	81	Eighty one
57	Fifty seven	82	Eighty two
58	Fifty eight	83	Eighty three
59	Fifty nine	84	Eighty four
60	Sixty	85	Eighty five
61	Sixty one	86	Eighty six
62	Sixty two	87	Eighty seven
63	Sixty three	88	Eighty eight
64	Sixty four	89	Eighty nine
65	Sixty five	90	Ninety
66	Sixty six	91	Ninety one
67	Sixty seven	92	Ninety two
68	Sixty eight	93	Ninety three
69	Sixty nine	94	Ninety four
70	Seventy	95	Ninety five
71	Seventy one	96	Ninety six
72	Seventy two	97	Ninety seven
73	Seventy three	98	Ninety eight
74	Seventy four	99	Ninety nine
75	Seventy five	100	Hundred

Teacher's Note

Teacher should give more drill work for writing numbers 1–20, 21–50 and 51–100 in words.

Exercise 2

(1) Write the numbers in words:

In figures	Numbers in words
35	Thirty five
75	
100	
48	
29	
93	
67	
89	
47	
79	

(2) Join the given numbers in figures with numbers in words:

64	Forty
81	Fifty seven
40	Ninety six
32	Fifty nine
57	Twenty five
59	Sixty four
96	Eighty one
89	Thirty two
25	Seventy two
72	Eighty nine

Teacher's Note

Teacher is asked to give more drill works besides given activities.

NUMBERS UP TO 1000

Place value

Recognize the place value of a 3-digit number

When we add 1 more in 99, we get **100**. Read as one hundred.

$$10 \text{ tens} = 100.$$

100 is a first 3-digit number.

In place value chart we write it as:

Hundreds	Tens	Ones
1	0	0



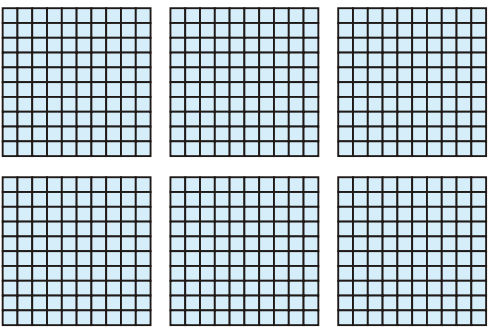
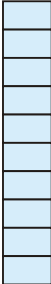
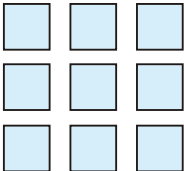
Activity

Write the place value of each digit in the given numbers.

(1) In **96** the place value of:
9 is tens and **6** is ones.

(2) In **354** the place value of:
3 is _____, **5** is _____ and **4** is _____.

Example 1: Count and write in hundreds, tens and ones.

Hundreds	Tens	Ones
		
6	1	9

Six hundred

ten

nine

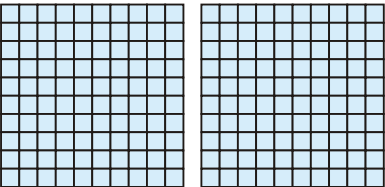

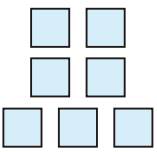
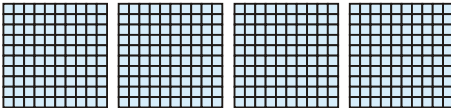
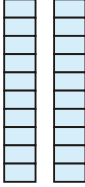
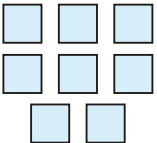
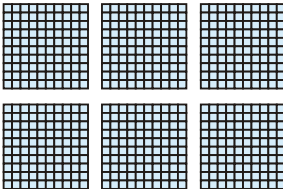
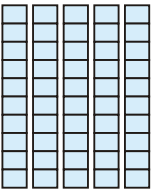
Six hundred nineteen = **619**

Teacher's Note

Teacher should help students to recognize the place value of 3-digit numbers and making 3-digit numbers by using different numerals.

Exercise 3

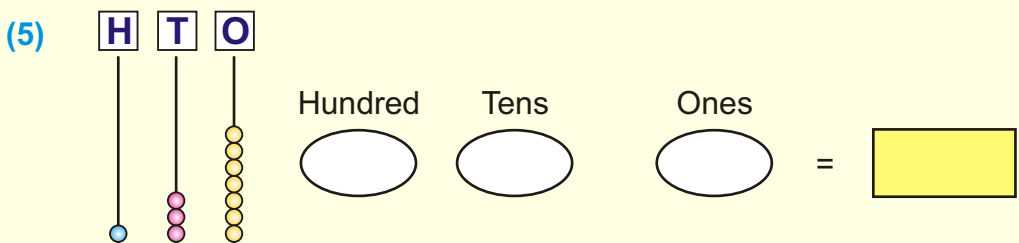
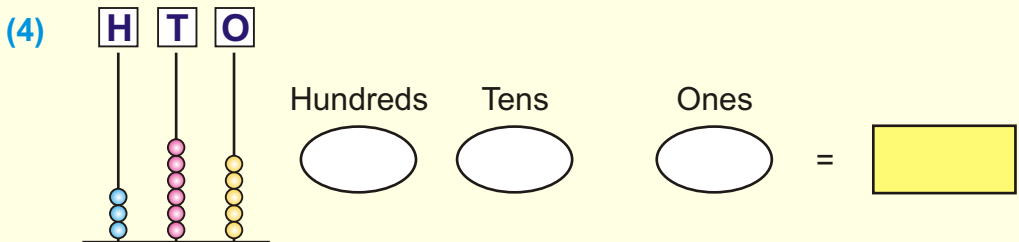
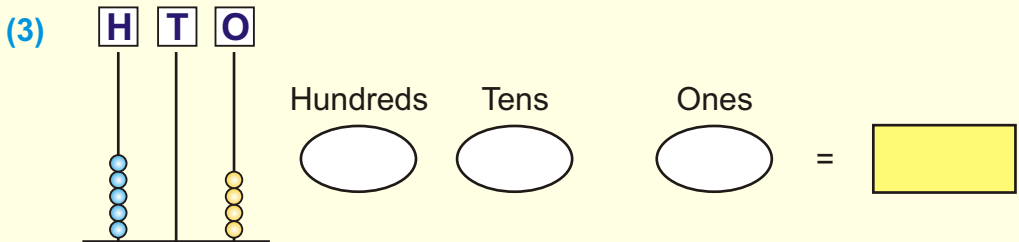
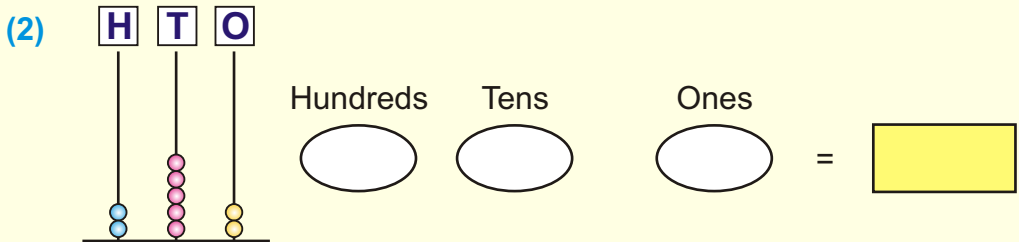
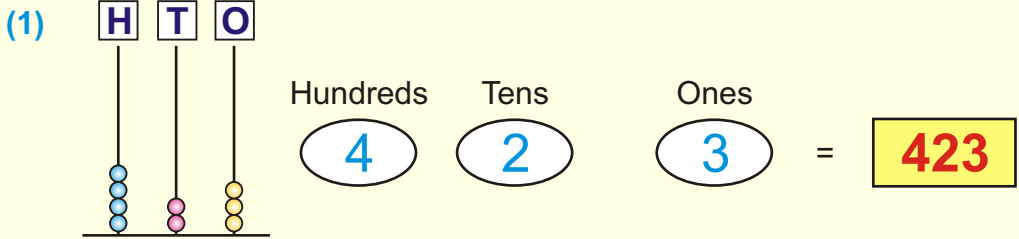
(1) Count and write hundreds, tens and ones.

(2) Write the digits at their correct places.

Number	Hundreds	Tens	Ones
2 0 8	2	0	8
1 8 0			
3 7 0			
5 0 0			
6 0 5			
3 4 7			
8 0 0			
9 9 0			

(3) Count hundreds, tens, ones and write the number in the box.



Teacher's Note

Teacher should use hand made abacus for the students in developing the concept of place values.

Identify the place value of a specific digit in a 3-digit number

Example: Identify the place value of encircled digit

3 4 **5** The place value of 5 is 5 ones = 5

3 **4** 5 The place value of 4 is 4 tens = 40

3 4 5 The place value of 3 is 3 hundreds = 300

Exercise 4

Write the place value of the digits given in coloured box.

(1)

3	4	2
---	---	---

4 Tens

(2)

9	4	6
---	---	---

(3)

9	6	4
---	---	---

(4)

5	7	0
---	---	---

(5)

1	8	9
---	---	---

(6)

5	0	1
---	---	---

(7)

3	3	3
---	---	---

(8)

5	0	0
---	---	---

(9)

8	3	5
---	---	---

(10)

6	9	8
---	---	---

Teacher's Note

Teacher should help the students to identify place value of specific digit in 3-digit numbers

Compare 2- or 3-digit numbers (hundreds, tens and ones)



Activity

Colour the smaller number red in each pair.

- (1) 24 = 28 61 = 21
- (2) 165 = 169 184 = 149

Exercise 5

(1) Colour the box of smaller number.

53	74	36	44	50	60	24	34
165	213	405	210	314	624	510	810

(2) Colour the box of greater number.

36	14	25	46	78	96	64	54
213	423	167	314	210	123	718	218

(3) Colour the box of greater number blue and the smaller number red.

26	70	13	65	36	81	42	12
29	79	63	50	84	24	93	56
412	360	210	910	244	356	112	402

Teacher's Note

Teacher should help the students in comparing 2-digit and 3-digit numbers.

Read and write numbers up to 999 in numerals

**Activity 1**

Read numbers from 100 to 199

100	101	102	103	104	105	106	107	108	109
110	111	112	113	114	115	116	117	118	119
120	121	122	123	124	125	126	127	128	129
130	131	132	133	134	135	136	137	138	139
140	141	142	143	144	145	146	147	148	149
150	151	152	153	154	155	156	157	158	159
160	161	162	163	164	165	166	167	168	169
170	171	172	173	174	175	176	177	178	179
180	181	182	183	184	185	186	187	188	189
190	191	192	193	194	195	196	197	198	199

**Activity 2**

Read numbers from 900 to 999.

900	901	902	903	904	905	906	907	908	909
910	911	912	913	914	915	916	917	918	919
920	921	922	923	924	925	926	927	928	929
930	931	932	933	934	935	936	937	938	939
940	941	942	943	944	945	946	947	948	949
950	951	952	953	954	955	956	957	958	959
960	961	962	963	964	965	966	967	968	969
970	971	972	973	974	975	976	977	978	979
980	981	982	983	984	985	986	987	988	989
990	991	992	993	994	995	996	997	998	999

Teacher's Note

Teacher should help the students to read and write numbers of 100–299, 300–399, 400–499, ..., 900–999.



Activity 3

Read and write the numbers.

201, 202, _____, _____, _____, _____, _____, _____, _____, 210351, 352, _____, _____, _____, _____, _____, _____, _____, 360411, _____, _____, _____, _____, _____, _____, _____, _____, 420561, _____, _____, _____, _____, _____, _____, _____, _____, 570721, _____, _____, _____, _____, _____, _____, _____, _____, 730881, _____, _____, _____, _____, _____, _____, _____, _____, 890

Exercise 6

Write the missing numbers:

300	301		303			306			
430			433			436			
500				504					509
661					666			669	
683			686				690		
748			751				755		
777					782				
816				820					
894				898				902	
990					995				999

Teacher's Note

Teacher should help the students to read and write the numbers up to 999.

Identify numbers given in ascending or descending order

Ascending order means from smaller number to bigger number.



Activity 1

Which one of the following given numbers are in ascending order?

8	23	100
---	----	-----



100	23	8
-----	----	---



23	100	8
----	-----	---



73	42	21	9
----	----	----	---



9	21	42	73
---	----	----	----



42	21	9	73
----	----	---	----



132	112	182	142
-----	-----	-----	-----



182	142	132	112
-----	-----	-----	-----



112	132	142	182
-----	-----	-----	-----



Activity 2

Which one of the following given numbers are in descending order?

13	73	93
----	----	----



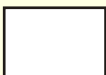
73	93	30
----	----	----



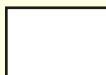
93	73	13
----	----	----



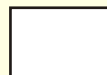
34	79	85	58
----	----	----	----



85	79	58	34
----	----	----	----



34	58	79	85
----	----	----	----



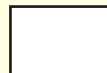
165	143	132	156
-----	-----	-----	-----



132	143	156	165
-----	-----	-----	-----



165	156	143	132
-----	-----	-----	-----



Teacher's Note

Teacher should help the students to develop the concept of ascending order from smaller to bigger number and descending order from bigger to smaller number.

Exercise 7

(A) Tick (✓) the given set of numbers which are in ascending order:

(1)

7	19	41	50
---	----	----	----

(2)

45	58	74	92
----	----	----	----

(3)

54	47	32	25
----	----	----	----

(4)

100	104	111	120
-----	-----	-----	-----

(5)

174	163	154	148
-----	-----	-----	-----

(6)

224	250	216	232
-----	-----	-----	-----

(B) Cross (✕) the given set of numbers which are in descending order:

(1)

65	57	88	49
----	----	----	----

(2)

35	53	76	89
----	----	----	----

(3)

94	72	61	50
----	----	----	----

(4)

120	111	101	94
-----	-----	-----	----

(5)

321	382	365	397
-----	-----	-----	-----

(6)

481	474	467	459
-----	-----	-----	-----

Count backward ten steps down from any given number

Example:

Count and write the numbers in ten steps down backward.

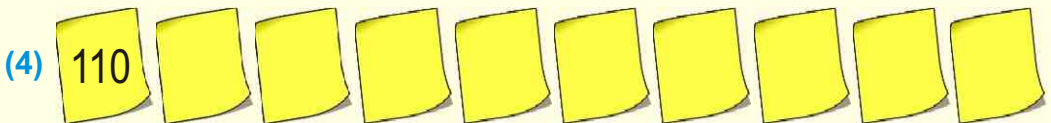
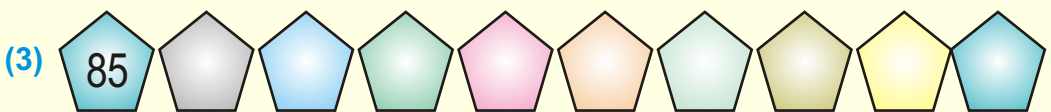


Solution:



Exercise 8

Count and write backward ten steps from the given number.



Teacher's Note

Teacher should use other examples for developing the concept of backward counting in ten steps down by given number.

Arrange numbers up to 999, written in mixed form, in increasing or decreasing order



Activity 1 Arrange the given numbers in increasing order.

73	45	59	64
45	59	64	73

131	129	145	118



Activity 2 Arrange the given numbers in decreasing order.

91	78	45	82
91	82	78	45

167	149	171	138

Exercise 9

Arrange the given numbers in increasing and decreasing order.

Increasing Order

36	41	19	56

180	163	131	190

390	330	380	350

Decreasing Order

35	42	74	89

208	244	218	256

483	428	455	419

COUNTING IN TENS AND HUNDREDS

Count and write in 10s (e.g. 10, 20, 30, ...).

Example: Count and read in tens.

10	20	30	40	50	60
110	120	130	140	150	160

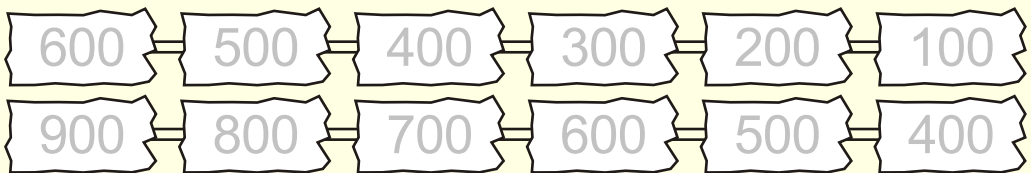
Exercise 10

Count in tens and write the missing numbers:-

- (1) 10 30 40
- (2) 100 120 150
- (3) 250 290

Count and write in 100s (e.g. 100, 200, 300, ...).

Example: Count the numbers in hundreds and trace the numbers.

**Exercise 11**

Count in hundreds and write the missing numbers.

100, _____, _____, _____, 500,

200, _____, _____, _____, _____,

500, _____, _____, _____, _____,

Identify the smallest/largest number in a given set of numbers



Activity Tick (✓) the smallest number and cross (×) the largest number.

1

35	41	17
25	14 ✓	52 ×

Smallest number
Largest number

2

112	132	141
162	150	126

Smallest number
Largest number

Exercise 12

Write the smallest and largest number from given set of numbers.

1

215	250	227
255	245	232

Smallest number
Largest number

2

350	320	310
380	400	370

Smallest number
Largest number

3

312	270	350
279	225	360

Smallest number
Largest number

4

511	422	410
505	550	401

Smallest number
Largest number

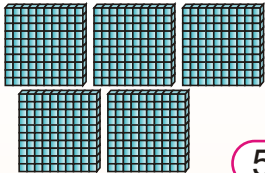
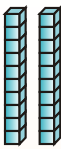
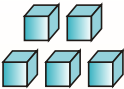
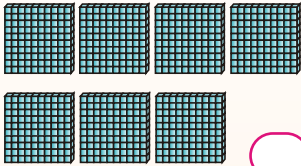
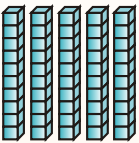

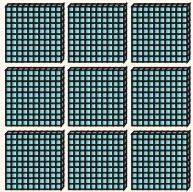
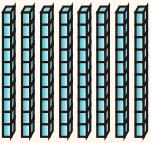
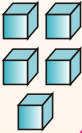
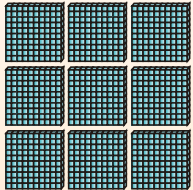
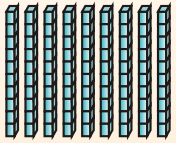
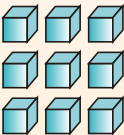
Teacher's Note

Teacher should help the students to identify the smallest and largest numbers in various given set of numbers.

Recognize that 1000 is one more than 999 and the first four digit number



Activity Count and write the number.

Hundreds	Tens	Ones	Number
 5	 2	 5	525
 	 	 	
 	 	 	
 	 	 	

When we add 1 more ones in 999, it makes 1000.

10 hundreds

make

One thousand

We read one thousand and write as

1000

1000 is the first 4-digit number.

Teacher's Note

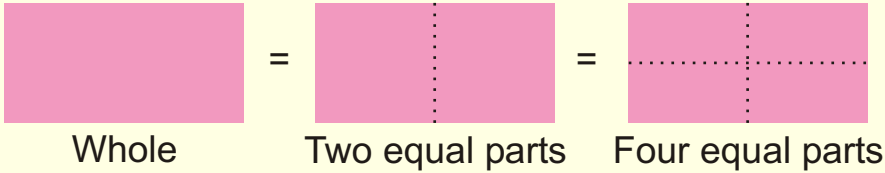
Teacher should help the students to build the concept of 1000 is 1 more than 999 and it is first four digit number.

FRACTIONS

Recognize fraction as equal parts of a whole

Let rectangle piece of paper be cut into equal parts.

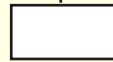
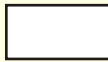
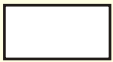
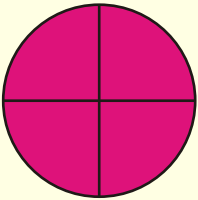
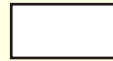
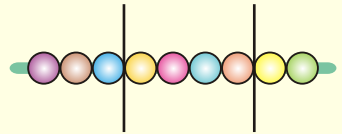
Equal parts of a whole



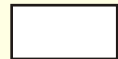
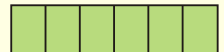
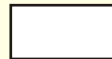
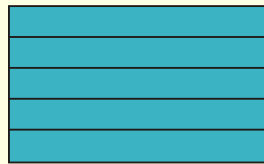
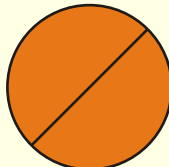
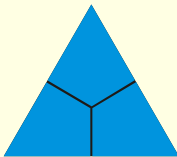
A fraction shows part of a whole when the whole is divided into equal parts.



Activity 1 Tick (✓) for equal parts and cross (✗) for unequal parts of the following:



Activity 2 Write how many equal parts of a whole are in the following figures.



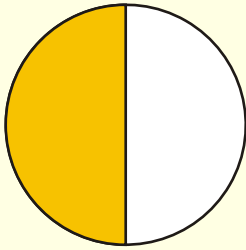
Teacher's Note

Teacher should show different objects and cut them into equal parts to explain fractions.

Identify half, one third and quarter with the help of objects and figures without writing $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$

One-half

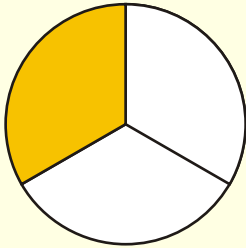
If we divide an object into two equal parts, then each of the part is called **one-half** of it.



This circle is divided into 2 equal parts.
One of the two equal parts is called a one-half of the circle.

One-third

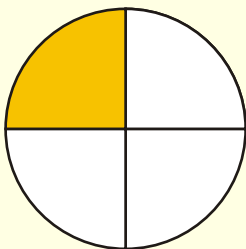
If we divide an object into three equal parts, then each of its part is called **one-third** of it.



This circle is divided into 3 equal parts.
Each part is one-third of the whole circle.

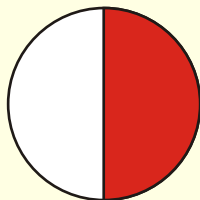
One-fourth

If we divide an object into four equal parts, then each of its part is called **one-fourth** of it.



This circle is divided into four equal parts.
Each part is one-fourth of the whole circle.

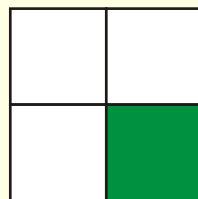
Look at the figures.



one half



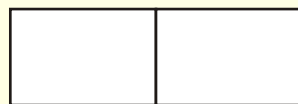
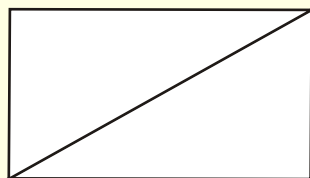
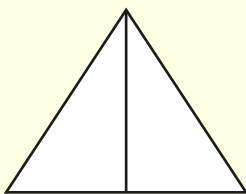
one third



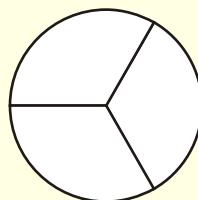
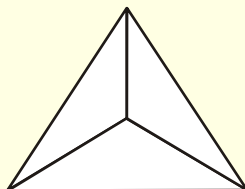
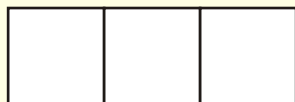
a quarter or
one-fourth



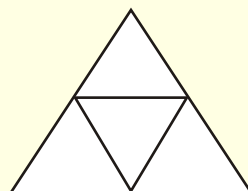
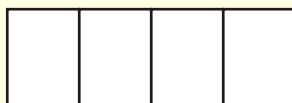
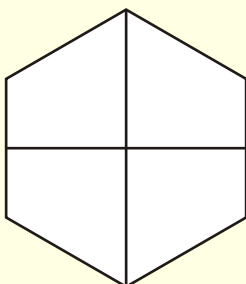
Activity 1 Colour one-half of each of the following.



Activity 2 Colour the one-third of the given objects.



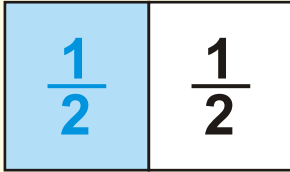
Activity 3 Colour the one-fourth or quarter of each figure.



Represent half, one third and quarter in numerical form
as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$

Numerical form of one - half

Numerically we write one - half as $\frac{1}{2}$.



$\frac{1}{2}$ means half.

The coloured part of the whole figure is $\frac{1}{2}$.

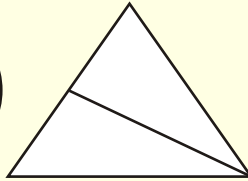
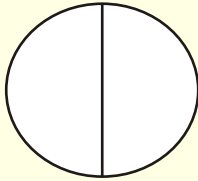
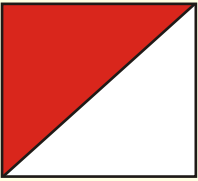
The uncoloured part is also $\frac{1}{2}$ of the whole figure.

One out of two equal parts is one-half.



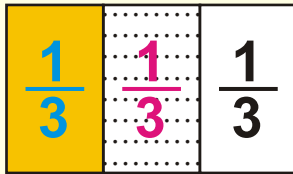
Activity

Colour red $\frac{1}{2}$ of each shape.



Numerical form of one - third

Numerically we write one - third as $\frac{1}{3}$.



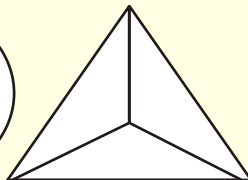
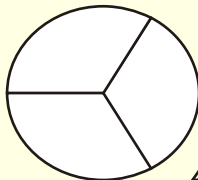
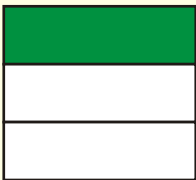
$\frac{1}{3}$ means 1 part of equal three parts of a whole figure.

One out of three equal parts is one-third.



Activity

Colour green $\frac{1}{3}$ of each shape.

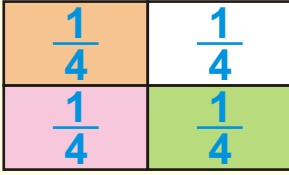


Teacher's Note

Teacher should explain that $\frac{1}{2}$ means shaded part of 2 equal parts and $\frac{1}{3}$ means one shaded part of 3 equal parts of a whole figure.

Numerical form of a quarter

Numerically we write one - fourth as $\frac{1}{4}$.



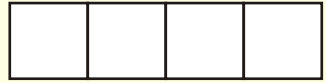
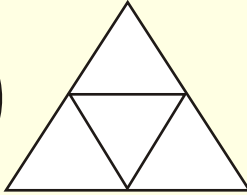
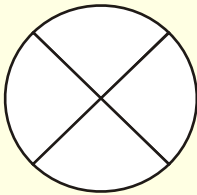
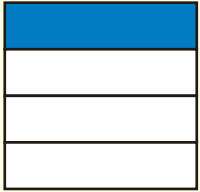
$\frac{1}{4}$ means one part of four
equal parts of a whole figure

One out of four equal parts is equal to **one-fourth** or **a quarter**.



Activity

Colour blue $\frac{1}{4}$ of each shape.

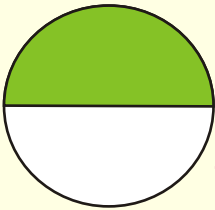


Colour the equal parts of a given figure to match a given fraction

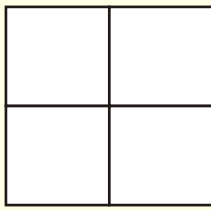


Activity

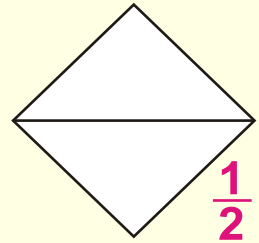
Colour the parts of the figure according to the given fraction.



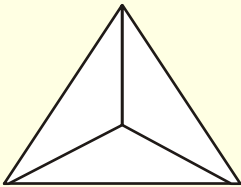
$\frac{1}{2}$



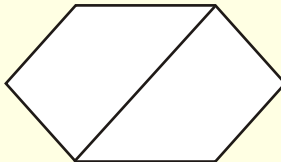
$\frac{1}{4}$



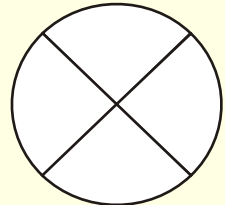
$\frac{1}{2}$



$\frac{1}{3}$



$\frac{1}{2}$



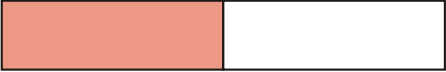


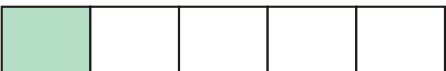







$\frac{1}{4}$

Teacher's Note

Teacher should explain that $\frac{1}{4}$ means one part of 4 equal parts of a whole figure.

Recognize and name unit fractions up to $\frac{1}{12}$

Look at the equal parts and read the fraction which is coloured.


Shape	Equal parts	Fraction	
		in words	in figures
	2	one-half	$\frac{1}{2}$
	3	one-third	$\frac{1}{3}$
	4	one-fourth	$\frac{1}{4}$
	5	one-fifth	$\frac{1}{5}$
	6	one-sixth	$\frac{1}{6}$
	7	one-seventh	$\frac{1}{7}$
	8	one-eighth	$\frac{1}{8}$
	9	one-ninth	$\frac{1}{9}$
	10	one-tenth	$\frac{1}{10}$
	11	one-eleventh	$\frac{1}{11}$
	12	one-twelfth	$\frac{1}{12}$

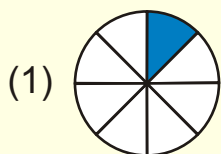
When a whole figure is divided into equal parts then one part out of all parts is called unit fraction.

Teacher's Note

Teacher should perform the above activity in groups of students by using paper strips and other regular objects.


Exercise 13

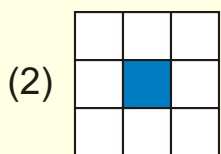
(A) Tick  the correct unit fraction represented by coloured portion.



$$\frac{1}{2}$$

$$\frac{1}{7}$$

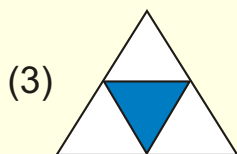
$$\frac{1}{8}$$




$$\frac{1}{7}$$

$$\frac{1}{9}$$

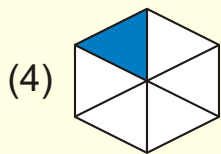
$$\frac{1}{12}$$



$$\frac{1}{3}$$

$$\frac{1}{7}$$

$$\frac{1}{4}$$

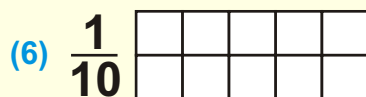
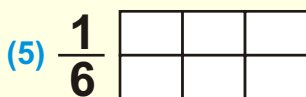
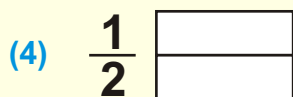
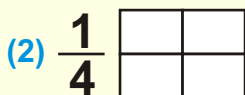
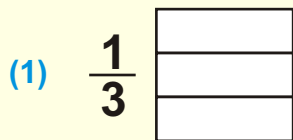


$$\frac{1}{8}$$

$$\frac{1}{6}$$

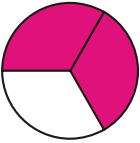
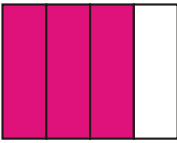
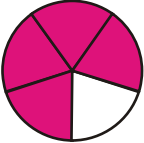

$$\frac{1}{5}$$

(B) Colour the given unit fractions.



Recognize fractions like two third, three fourth, four fifth and so on using $\frac{2}{3}, \frac{3}{4}, \dots$

Look at the equal parts and read the fraction represented by coloured portion.

Shape	Equal Parts	Coloured Parts	Fraction	
			in words	in figures
	3	2	two-third	$\frac{2}{3}$
	4	3	three-fourth	$\frac{3}{4}$
	5	4	Four-fifth	$\frac{4}{5}$
	6	5	five-sixth	$\frac{5}{6}$



Activity

Tick ☒ the right fraction represented by the shaded portion.

(1)

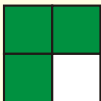


$\frac{2}{3}$ ☒

$\frac{3}{4}$

$\frac{1}{5}$

(2)



$\frac{4}{9}$

$\frac{3}{4}$

$\frac{7}{9}$

(3)



$\frac{3}{9}$

$\frac{5}{7}$

$\frac{4}{5}$

(4)



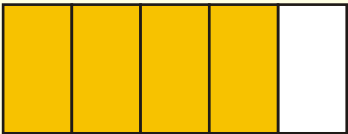
$\frac{1}{10}$


$\frac{5}{6}$


$\frac{1}{12}$

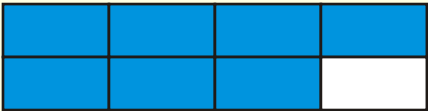
Exercise 14

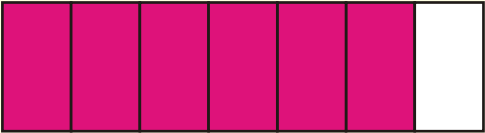
Match the picture with correct fraction.

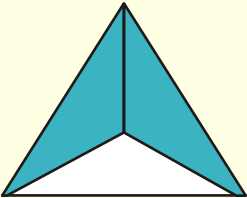
(1)  $\frac{9}{10}$


(2)  $\frac{3}{4}$

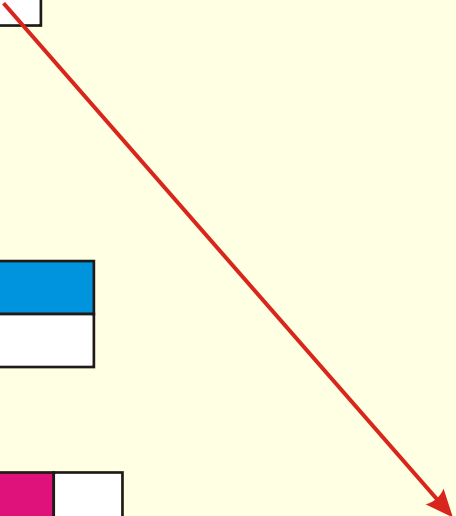
(3)  $\frac{2}{3}$

(4)  $\frac{4}{5}$

(5)  $\frac{5}{6}$

(6)  $\frac{7}{8}$

(7)  $\frac{6}{7}$



NUMBER OPERATIONS

ADDITION

Addition of 2-digit numbers (with carrying)

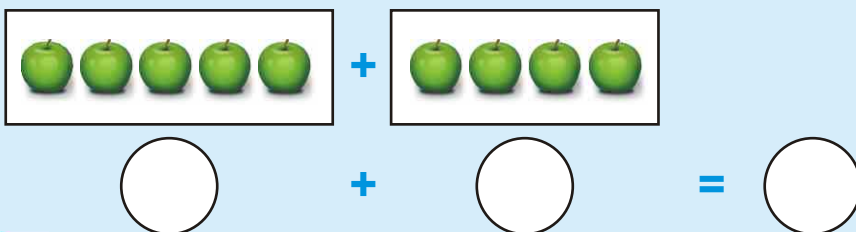
Add ones and ones

We remember, when we add two numbers, we get their sum.

Addition is to find the sum by combining **two** or **more things**.



Activity 1 Count and add number of apples in given boxes.



Activity 2 Count and add the number then the sum of objects in given boxes.

 6	+	 5	=	11
 7	+	 3	=	
 	+	 	=	
 	+	 	=	

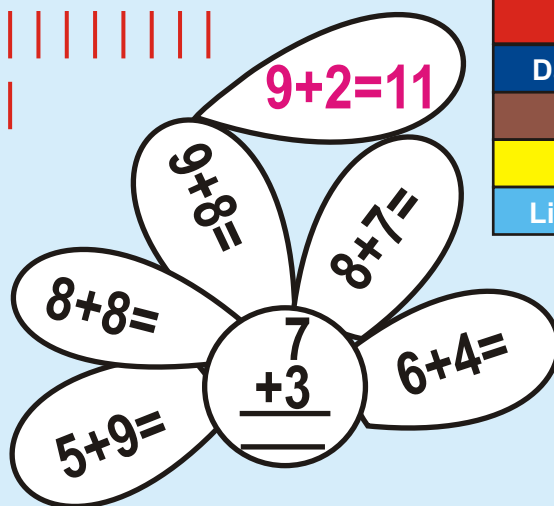
Teacher's Note

Teacher will help the students to revise the addition sums by adding ones and ones by using different objects. For example pencils, chalks, notebooks, desks etc. in the classroom.



Activity 3 Match the answer and colour them as given in box.

Solve:
$$\begin{array}{r} 9 \\ + 2 \\ \hline 11 \end{array}$$




Pink	16
Red	15
Dark Blue	11
Brown	10
Yellow	14
Light Blue	17

Exercise 15


(1) Add:

(1)



$$\begin{array}{r} 7 \\ + 3 \\ \hline 10 \end{array}$$

(2)




$$\begin{array}{r} 8 \\ + 2 \\ \hline \end{array}$$

(3)




$$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$$

(4)




$$\begin{array}{r} 8 \\ + 4 \\ \hline \end{array}$$

(5)



$$\begin{array}{r} 5 \\ + 8 \\ \hline \end{array}$$

(6)



$$\begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$$

(2) Add and fill in the boxes.

(1) $7 + 7 =$ 14

(3) $5 + 5 =$

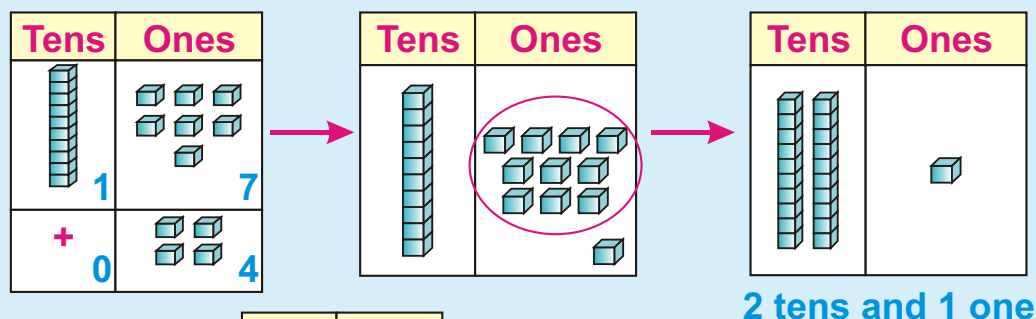
(2) $4 + 9 =$

(4) $2 + 9 =$

Add ones and 2-digit numbers with carrying

Example 1: Add 17 and 4.

Solution:



Tens Ones

$$\begin{array}{r} \textcircled{1} 17 \\ + 4 \\ \hline 21 \end{array}$$

Step1:

Add $7 + 4 = 11$

Write 1 at ones place and carry 1 ten to tens place.

Step2:

Add $1 + 1 = 2$

Write 2 at tens place.

Means the $17 + 4 = 21$

Exercise 16

(A) Add:

(1)	Ten Ones	(2)	Ten Ones	(3)	Ten Ones	(4)	Ten Ones
$\begin{array}{r} \textcircled{1} 82 \\ + 9 \\ \hline 91 \end{array}$	$\begin{array}{r} 36 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 66 \\ + 4 \\ \hline \end{array}$				
(5)	T O	(6)	T O	(7)	T O	(8)	T O
$\begin{array}{r} 49 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ + 6 \\ \hline \end{array}$				

Teacher's Note

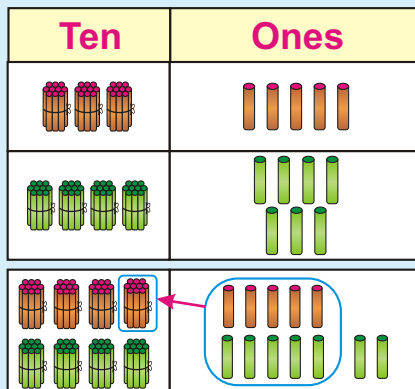
Teacher will help the students to understand the addition process of 2-digit number with ones by using available objects like stones, match sticks, chalks etc.

Add 2 digit numbers and 2 digit numbers with carrying

Example: Add 35 and 47.

Solution:

Ten	Ones
3	5
+ 4	7



Step 1

Ten	Ones
3	5
+ 4	7
	12

Add $5 + 7 = 12$ ones
Write 2 at ones place
and carry 1 to tens place.

Step 2 Finally add tens

T	O
3	5
+ 4	7
8	2

or
$$\begin{array}{r} \textcircled{1} 35 \\ + 47 \\ \hline 82 \end{array}$$

Add tens $1 + 3 + 4 = 8$
write 8 below the tens place.

Exercise 17

(A) Add:

(1)
$$\begin{array}{r} 18 \\ + 12 \\ \hline \end{array}$$

(2)
$$\begin{array}{r} 25 \\ + 19 \\ \hline \end{array}$$

(3)
$$\begin{array}{r} 35 \\ + 46 \\ \hline \end{array}$$

(4)
$$\begin{array}{r} 68 \\ + 24 \\ \hline \end{array}$$

(5)
$$\begin{array}{r} 39 \\ + 58 \\ \hline \end{array}$$

(6)
$$\begin{array}{r} 47 \\ + 28 \\ \hline \end{array}$$

(7)
$$\begin{array}{r} 44 \\ + 47 \\ \hline \end{array}$$

(8)
$$\begin{array}{r} 76 \\ + 14 \\ \hline \end{array}$$

(B) Add and write sum in the boxes:

(1) $19 + 26 = \boxed{}$

(2) $17 + 23 = \boxed{}$

(3) $63 + 18 = \boxed{}$

(4) $57 + 34 = \boxed{}$

Teacher's Note

Teacher will help the students to understand the addition process of 2-digit numbers with 2-digit numbers by using lines match sticks, chalks and other available objects.

Solve real life problems, involving addition of 2-digit numbers with carrying

Example 1: There are 18 eggs in one bucket and 9 eggs in an other bucket. How many eggs are there in both buckets?

Solution:

One bucket contains ① 18 eggs



An other bucket contains + 9 eggs

Total 27 eggs



Exercise 18

- (1) In a weekly test Rasheeda secured 28 marks in English and 18 marks in Mathematics. Find the total number of marks?
- (2) Hira picked 49 flowers and Hina picked 37 flowers. How many flowers did they pick in all?
- (3) Zohaib has 65 caryans, he buys 18 more. How many caryans does he have now?
- (4) In a cricket test match Naeem scores 64 runs in first inning and 27 runs in second inning. Find the total number of runs scored by Naeem?
- (5) Anwar sells 22 eggs on Saturday and 29 eggs on Sunday. How many eggs does he sell in both days?
- (6) There are 36 sharpeners in one packet and 27 sharpeners are in an other packet. How many sharpeners are there in both packets?
- (7) Sania has Rs 52, her father gives her 19 more rupees. How many rupees does Sania have now?

Addition of 3-digit numbers without carrying

Add 3-digit numbers and ones without carrying



Activity Add 123 and 6.

Solution: $\begin{array}{r} 123 \\ + 6 \\ \hline 129 \end{array}$	H 	T 	O

Exercise 19

(A) Add:

(1) $\begin{array}{r} \text{H T O} \\ 195 \\ + 3 \\ \hline \end{array}$	(2) $\begin{array}{r} \text{H T O} \\ 174 \\ + 4 \\ \hline \end{array}$	(3) $\begin{array}{r} \text{H T O} \\ 363 \\ + 6 \\ \hline \end{array}$	(4) $\begin{array}{r} \text{H T O} \\ 437 \\ + 2 \\ \hline \end{array}$
(5) $\begin{array}{r} \text{H T O} \\ 531 \\ + 7 \\ \hline \end{array}$	(6) $\begin{array}{r} \text{H T O} \\ 710 \\ + 9 \\ \hline \end{array}$	(7) $\begin{array}{r} \text{H T O} \\ 632 \\ + 7 \\ \hline \end{array}$	(8) $\begin{array}{r} \text{H T O} \\ 216 \\ + 1 \\ \hline \end{array}$

(B) Add and write the sum in the boxes:

(1) $100 + 2 =$ <input type="text"/>	(2) $102 + 3 =$ <input type="text"/>
(3) $305 + 4 =$ <input type="text"/>	(4) $100 + 4 =$ <input type="text"/>
(5) $601 + 7 =$ <input type="text"/>	(6) $702 + 6 =$ <input type="text"/>

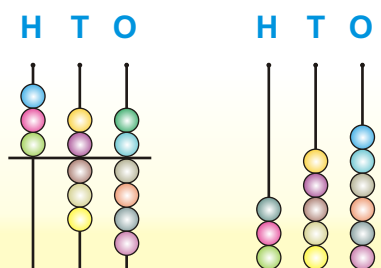
Add 3-digit numbers and 2-digit numbers without carrying

Example: Add 322 and 34.

Solution:

	H	T	O
	3	2	2
+	3	4	
<hr/>			
	3	5	6

With the help of abacus.



Thus $322 + 34 = 356$

Exercise 20

(A) Add:

(1)

	H	T	O
	1	2	5
+	1	4	
<hr/>			

(2)

	H	T	O
	3	7	5
+	2	3	
<hr/>			

(3)

	H	T	O
	2	8	5
+	1	3	
<hr/>			

(4)

	H	T	O
	2	1	1
+	3	7	
<hr/>			

(5)

	H	T	O
	2	8	9
+	1	0	
<hr/>			

(6)

	H	T	O
	3	3	1
+	6	8	
<hr/>			

(7)

	H	T	O
	7	0	0
+	9	9	
<hr/>			

(8)

	H	T	O
	4	3	2
+	4	4	
<hr/>			

(B) Tick (✓) the correct answer and cross (×) the wrong answer:

		Correct	Wrong
(1)	$119 + 50 = 159$	<input type="checkbox"/>	<input type="checkbox"/>
(2)	$237 + 22 = 359$	<input type="checkbox"/>	<input type="checkbox"/>
(3)	$703 + 20 = 723$	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Add 3-digit numbers and 3-digit numbers without carrying

Example: Add 346 and 143.

<p><i>Solution:</i></p> <table> <tr><td>H</td><td>T</td><td>O</td></tr> <tr><td>3</td><td>4</td><td>6</td></tr> <tr><td>+</td><td>1</td><td>4</td></tr> <tr><td>4</td><td>8</td><td>9</td></tr> </table>	H	T	O	3	4	6	+	1	4	4	8	9	<p>H</p>	<p>T</p>	<p>O</p>
H	T	O													
3	4	6													
+	1	4													
4	8	9													

Exercise 21

Find the sum:

<p>(1) H T O</p> <table> <tr><td>1</td><td>0</td><td>8</td></tr> <tr><td>+</td><td>1</td><td>0</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	1	0	8	+	1	0	_____			_____			<p>(2) H T O</p> <table> <tr><td>3</td><td>0</td><td>6</td></tr> <tr><td>+</td><td>2</td><td>0</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	3	0	6	+	2	0	_____			_____			<p>(3) H T O</p> <table> <tr><td>2</td><td>3</td><td>0</td></tr> <tr><td>+</td><td>2</td><td>0</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	2	3	0	+	2	0	_____			_____			<p>(4) H T O</p> <table> <tr><td>1</td><td>8</td><td>3</td></tr> <tr><td>+</td><td>1</td><td>1</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	1	8	3	+	1	1	_____			_____		
1	0	8																																																	
+	1	0																																																	

3	0	6																																																	
+	2	0																																																	

2	3	0																																																	
+	2	0																																																	

1	8	3																																																	
+	1	1																																																	

<p>(5) H T O</p> <table> <tr><td>2</td><td>1</td><td>5</td></tr> <tr><td>+</td><td>1</td><td>5</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	2	1	5	+	1	5	_____			_____			<p>(6) H T O</p> <table> <tr><td>3</td><td>3</td><td>3</td></tr> <tr><td>+</td><td>2</td><td>2</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	3	3	3	+	2	2	_____			_____			<p>(7) H T O</p> <table> <tr><td>5</td><td>5</td><td>0</td></tr> <tr><td>+</td><td>3</td><td>3</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	5	5	0	+	3	3	_____			_____			<p>(8) H T O</p> <table> <tr><td>3</td><td>0</td><td>2</td></tr> <tr><td>+</td><td>5</td><td>0</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	3	0	2	+	5	0	_____			_____		
2	1	5																																																	
+	1	5																																																	

3	3	3																																																	
+	2	2																																																	

5	5	0																																																	
+	3	3																																																	

3	0	2																																																	
+	5	0																																																	

<p>(9) H T O</p> <table> <tr><td>7</td><td>2</td><td>5</td></tr> <tr><td>+</td><td>1</td><td>3</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	7	2	5	+	1	3	_____			_____			<p>(10) H T O</p> <table> <tr><td>6</td><td>7</td><td>3</td></tr> <tr><td>+</td><td>2</td><td>2</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	6	7	3	+	2	2	_____			_____			<p>(11) H T O</p> <table> <tr><td>5</td><td>7</td><td>6</td></tr> <tr><td>+</td><td>1</td><td>0</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	5	7	6	+	1	0	_____			_____			<p>(12) H T O</p> <table> <tr><td>8</td><td>3</td><td>7</td></tr> <tr><td>+</td><td>1</td><td>6</td></tr> <tr><td colspan="3">_____</td></tr> <tr><td colspan="3">_____</td></tr> </table>	8	3	7	+	1	6	_____			_____		
7	2	5																																																	
+	1	3																																																	

6	7	3																																																	
+	2	2																																																	

5	7	6																																																	
+	1	0																																																	

8	3	7																																																	
+	1	6																																																	

Solve real life problems, involving addition of 3-digit numbers, without carrying

Example: Adil buys 242 yellow balloons and his father gave 123 green balloons more. How many balloons had he in all?

Solution

	H	T	O
Yellow balloons	2	4	2

Green balloons	+	1	2	3
----------------	---	---	---	---

Total

3	6	5
---	---	---

Or $242 + 123 = 365$

Exercise 20

Add:

(1) One shelf contains	2	1	5	Story books		
Another shelf contains	+	2	7	1	Story books	
Both shelves contain	<table><tbody><tr><td></td></tr></tbody></table>					Story books

(2) One jar contains	1	5	3	toffees		
another jar contains	+	2	4	4	toffees	
Both jars contain =	<table><tbody><tr><td></td></tr></tbody></table>					toffees

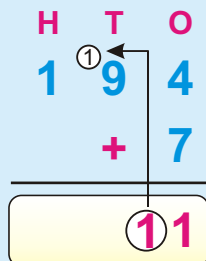
- (3) Aasma has 331 picture cards. Her sister has 625 picture cards. How many picture cards do both the sisters have in all?
- (4) A shopkeeper purchased 523 large kites and 113 kites of medium size. Find the total number of kites he purchased.
- (5) There are 450 oranges in a basket and 140 oranges in another basket. How many oranges are there in all?
- (6) Kanwal has Rs 130, she got Rs 115 from her mother. How much many rupees she has in all?
- (7) There are 248 chocolates in one packet and 350 in another packet. Find the total number of chocolates?

Addition of 3-digit numbers with carrying

Add 3-digit numbers and ones with carrying of tens and hundreds

Example: Add 194 and 7

Solution:



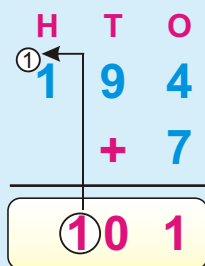
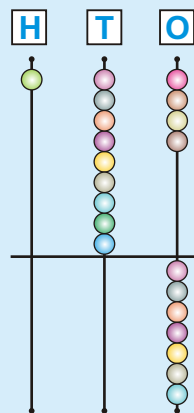
Step 1:

194 = 1 hundred, 9 tens and 4 ones.

Add ones **4 + 7 = 11 ones**

11 ones = 1 ten and **1 one**

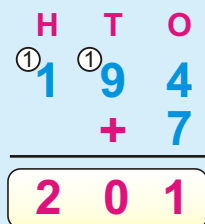
write 1 at ones place and carry 1 to tens place



Step 2:

Add tens **9 + 1 = 10 tens**

write **0** at tens place and carry 1 to hundreds place



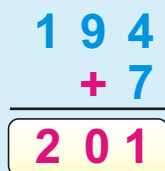
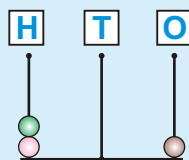
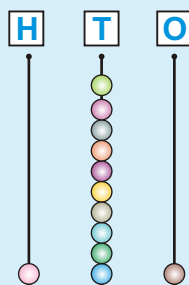
Step 3:

Add hundreds **1 + 1 = 2 hundreds**

Write 2 at hundred place

Hence **194 + 7 = 201**

or



Exercise 23

(A) Add:

(1)
$$\begin{array}{r} \text{H T O} \\ 397 \\ + 8 \\ \hline \hline \end{array}$$

(2)
$$\begin{array}{r} \text{H T O} \\ 299 \\ + 7 \\ \hline \hline \end{array}$$

(3)
$$\begin{array}{r} \text{H T O} \\ 496 \\ + 9 \\ \hline \hline \end{array}$$

(4)
$$\begin{array}{r} \text{H T O} \\ 396 \\ + 7 \\ \hline \hline \end{array}$$

(5)
$$\begin{array}{r} \text{H T O} \\ 698 \\ + 5 \\ \hline \hline \end{array}$$

(6)
$$\begin{array}{r} \text{H T O} \\ 797 \\ + 7 \\ \hline \hline \end{array}$$

(7)
$$\begin{array}{r} \text{H T O} \\ 899 \\ + 3 \\ \hline \hline \end{array}$$

(8)
$$\begin{array}{r} \text{H T O} \\ 494 \\ + 8 \\ \hline \hline \end{array}$$

(9)
$$\begin{array}{r} \text{H T O} \\ 395 \\ + 6 \\ \hline \hline \end{array}$$

(10)
$$\begin{array}{r} \text{H T O} \\ 593 \\ + 7 \\ \hline \hline \end{array}$$

(11)
$$\begin{array}{r} \text{H T O} \\ 949 \\ + 9 \\ \hline \hline \end{array}$$

(12)
$$\begin{array}{r} \text{H T O} \\ 591 \\ + 9 \\ \hline \hline \end{array}$$

(B) Add and fill the boxes:

(1) $\boxed{292} + \boxed{8} = \boxed{}$

(2) $\boxed{397} + \boxed{6} = \boxed{}$

(3) $\boxed{896} + \boxed{4} = \boxed{}$

(4) $\boxed{599} + \boxed{9} = \boxed{}$

(5) $\boxed{398} + \boxed{7} = \boxed{}$

(6) $\boxed{494} + \boxed{7} = \boxed{}$

(7) $\boxed{598} + \boxed{9} = \boxed{}$

(8) $\boxed{498} + \boxed{9} = \boxed{}$

(9) $\boxed{497} + \boxed{5} = \boxed{}$

(10) $\boxed{595} + \boxed{5} = \boxed{}$

Add 3-digit numbers and 2-digit numbers with carrying of tens and hundreds

Example: Add 196 and 45.

Solution:

H	T	O
1	9	6
+	4	5
		11

H	T	O
1	9	6
+	4	5
1	4	1

H	T	O
1	9	6
+	4	5
2	4	1

Step 1:

196 = 1 hundred, 9 tens and 6 ones

45 = 4 tens and 5 ones

Add ones: $6 + 5 = 11$ ones

write 1 at ones place and

carry 1 to tens place

Step 2:

Now add tens $9 + 4 + 1 = 14$ tens

14 tens = 1 hundred and 4 tens.

Write 4 at tens place and carry

1 to hundreds place.

Step 3:

Now add hundreds

$1 + 1 = 2$ hundreds

Or $196 + 45 = 241$

Exercise 24

(A) Find the sum of following:

(1)

H	T	O
1	9	5
+	3	9
		234

(2)

H	T	O
2	8	7
+	3	7

(3)

H	T	O
6	5	4
+	6	8

(4)

H	T	O
3	5	8
+	7	6

(5)

H	T	O
4	9	9
+	5	5

(6)

H	T	O
4	9	3
+	1	8

(7)

H	T	O
9	9	9
+	4	1

(8)

H	T	O
8	4	5
+	8	7

(9)

H	T	O
7	8	5
+	2	8

(10)

H	T	O
6	6	7
+	3	6

(11)

H	T	O
8	8	2
+	3	8

(12)

H	T	O
7	9	2
+	9	9

Add 3-digit numbers and 3-digit numbers with carrying of tens and hundreds

Example 1: Add 234 and 679.

Solution:

Step 1: First add the ones.

$$4 + 9 = 13 \text{ ones}$$

Write 3 in ones column.

Carry 1 to tens place.

O
4
+ 9
13

H	T	O
2	^① 3	4
+ 6	7	9
		3

Step 2: Next add the tens.

$$1 + 3 + 7 = 11 \text{ tens}$$

Write 1 in tens column.

Carry 1 to hundreds place.

T
^① 3
+ 7
11

H	T	O
^① 2	^① 3	4
+ 6	7	9
	1	3

Step 3:

Add hundreds in the last.

$$1 + 2 + 6 = 9$$

Write 9 in hundreds column.

H
^① 2
+ 6
9

H	T	O
^① 2	^① 3	4
+ 6	7	9
9	1	3

Thus

$$\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \text{①} 2 \quad \text{①} 3 \quad 4 \\ + 6 \quad 7 \quad 9 \\ \hline 9 \quad 1 \quad 3 \end{array}$$

Or $234 + 679 = 913$

Example 2: Add 234 and 386

Solution:

$$\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \text{①} 2 \quad \text{①} 3 \quad 4 \\ + 3 \quad 8 \quad 6 \\ \hline 6 \quad 2 \quad 0 \end{array}$$

Or $234 + 386 = 620$

Exercise 25**Add:**

(1)

H	T	O
5	6	5
+	3	6
9		
<hr/>		
<hr/>		

(2)

H	T	O
2	8	7
+	3	2
7		
<hr/>		
<hr/>		

(3)

H	T	O
3	9	5
+	3	7
8		
<hr/>		
<hr/>		

(4)

H	T	O
7	2	9
+	1	7
5		
<hr/>		
<hr/>		

(5)

H	T	O
7	7	7
+	1	9
9		
<hr/>		
<hr/>		

(6)

H	T	O
5	5	5
+	3	9
5		
<hr/>		
<hr/>		

(7)

H	T	O
6	3	3
+	2	6
7		
<hr/>		
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(8)

H	T	O
4	6	8
+	3	3
8		
<hr/>		
<hr/>		

(9)

H	T	O
3	1	9
+	5	9
1		
<hr/>		
<hr/>		

(10)

H	T	O
3	9	2
+	5	8
9		
<hr/>		
<hr/>		

(11)

H	T	O
6	6	3
+	2	5
8		
<hr/>		
<hr/>		

(12)

H	T	O
7	3	1
+	1	7
9		
<hr/>		
<hr/>		

Solve real life problems with carrying of tens and hundreds

Example 1:

Salma reads 318 pages of a story book in the first week and 219 pages of another story book in the second week. Find the total number of pages read by her.

Solution:

Salma reads

In first week	3 ^① 18	pages
In second week	+ 219	pages
Total	<div>537</div>	pages

Example 2:

Ali's father earns 485 rupees on Monday and 466 rupees on Tuesday. How much money he earned in two days?

Solution:

Ali's father earns

On Monday	4 ^① 8 ^① 5	rupees
On Tuesday	+ 466	rupees
Total	<div>951</div>	rupees

Teacher's Note

Teacher should help the students in solving daily life problems and encourage the students to make their own problems.

Exercise 26

- (1) Sadia used **159** red and **244** black buttons for making a design. How many buttons did she use?
- (2) A shopkeeper sold **376** litres of milk in first week and **465** litres of milk in second week. How many litres of milk did he sell?
- (3) Farzana spent Rs **155** to purchase books and Rs **147** on colour pencils. Find the total amount she spent.
- (4) Bisma has **268** computer CD's and her brother has **153** computer CD's. How many CD's they both have altogether?
- (5) The price of bat is Rs **395** and the price of ball is Rs **127**. What is the total price of both bat and ball altogether?
- (6) There are **289** books on one shelf and **372** books on the other. How many books are there on both shelves?
- (7) Ali has Rs **586**, he got Rs **479** from his brother. How many rupees he has now?
- (8) Adnan has collected **354** stamps and his sister has **259** stamps. How many stamps they both have altogether?

COMMUTATIVE PROPERTY

Verify commutative property with respect to addition (sum should not exceed 100)

Look at this picture of balloons.

The boy has 2 pink balloons in his left hand and 3 blue balloons in his right hand.

He has total $(2 + 3 = 5)$ balloons in both hands.

He now exchange the position of balloons.

He has 3 blue balloons in his left hand, 2 pink balloons in his right hand.

Again he has total 5 balloons $(3 + 2 = 5)$ in his both hands.

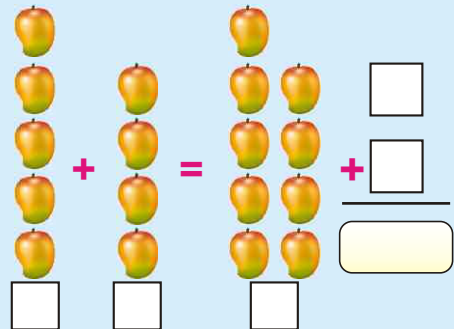
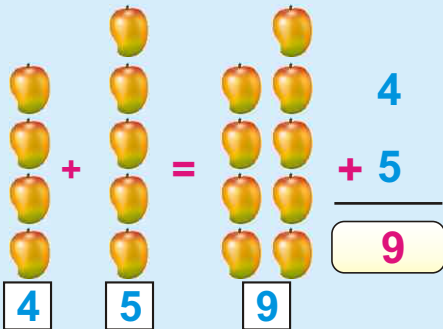


In either case the total is 5.

This shows that $2 + 3 = 3 + 2$



Activity 1 Find the total number of mangoes.



Hence $4 + 5 = 9$ or $5 + 4 = 9$

or $4 + 5 = 5 + 4$

Hence the sum of two numbers added in any order, their sum remains the same. We say that addition is **commutative**.

Teacher's Note

Teacher should explain that if we add two numbers in any order, we get the same answer.

Example 1: Add and verify.

$$12 + 27 = \boxed{} = 27 + 12$$



Solution: $12 + 27 = \boxed{39} = 27 + 12$



Hence $12 + 7 = 27 + 12$

Exercise 27

(A) Verify commutative property of addition:



(1)



	3
	+ 4
<div></div>	

	4
	+ 3
<div></div>	

Hence $3 + 4 = 4 + 3$

(2)

	7
	+ 2
<div></div>	

	2
	+ 7
<div></div>	

Hence $\boxed{} + \boxed{} = \boxed{} + \boxed{}$

(3)

	5
	+ 3
<div></div>	

	3
	+ 5
<div></div>	

Hence $\boxed{} + \boxed{} = \boxed{} + \boxed{}$

(B) Verify:

(1) $8 + 2 = 2 + 8$

(2) $9 + 1 = 1 + 9$

(3) $28 + 30 = 30 + 28$

(4) $24 + 36 = 36 + 24$

(5) $42 + 38 = 38 + 42$

(6) $40 + 50 = 50 + 40$

(7) $45 + 35 = 35 + 45$

(8) $31 + 49 = 49 + 31$

SUBTRACTION

Subtract ones from 2-digit numbers with borrowing

We have already learnt the process of subtraction in class 1.

Subtraction means to take away.

Example: Subtract 7 from 23.

Solution: 23 has 2 tens and 3 ones and 7 has 7 ones

Step 1: Subtraction of ones:

Since 3 is less than 7,

7 ones can not be taken away from 3 ones.

Borrow 1 ten and convert it in

10 ones and add 3 in it. $10 + 3 = 13$

Now subtract 7 ones from 13 ones.

$13 - 7 = 6$ We get 6 ones.

Step 2: Subtraction of tens:

After borrowing, the digit

left on tens place is 1

Hence, $23 - 7 = 16$

T	O
2	3
-0	7

T	O
¹ 2	¹⁰ 3
-0	7
1	6

Exercise 28

Find the subtraction:

(1)

T	O
3	7
-	9

(2)

T	O
4	3
-	5

(3)

T	O
6	1
-	8

(4)

T	O
7	4
-	6

(5)

T	O
8	5
-	7

(6)

T	O
3	0
-	4

Teacher's Note

Teacher should use concrete objects like paper strip or sticks etc. to explain the concept of borrowing and breaking up tens into ones.

Subtract 2-digit numbers from 2-digit numbers with borrowing

Example: Subtract 26 from 42.

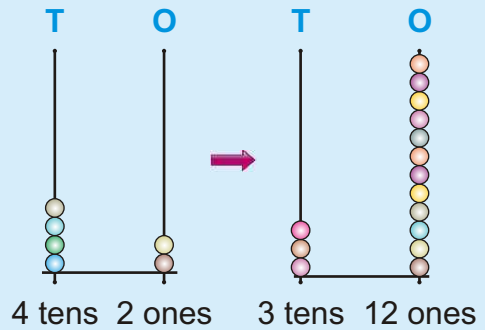
Solution:

Step 1: Subtraction of ones

6 ones can not be taken away from 2 ones

We borrow 1 ten from 4 tens
 $4 \text{ tens} = 3 \text{ tens} + 10 \text{ ones}$

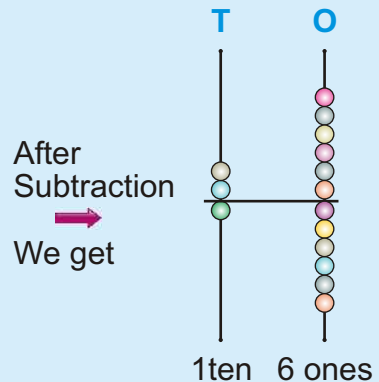
Now add 10 ones to 2 ones
 Therefore, $10 \text{ ones} + 2 \text{ ones} = 12 \text{ ones}$



Now subtract 6 ones from 12 ones
 $12 \text{ ones} - 6 \text{ ones} = 6 \text{ ones}$
 Write 6 at ones place

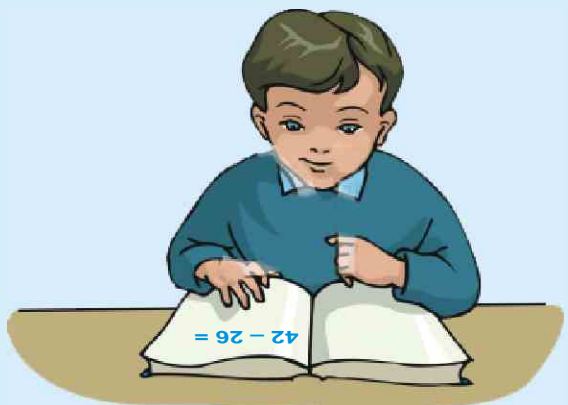
Step 2: Subtraction of tens

Finally subtract 2 tens from 3 tens
 $3 \text{ tens} - 2 \text{ tens} = 1 \text{ tens}$
 Write 1 at tens place



T	O
³ 4	¹⁰ 2
-2	6
1	6

Thus $42 - 26 = 16$



Exercise 29

(A) Subtract:

(1) $\begin{array}{r} \text{T O} \\ 32 \\ -15 \\ \hline \\ \hline \end{array}$	(2) $\begin{array}{r} \text{T O} \\ 70 \\ -25 \\ \hline \\ \hline \end{array}$	(3) $\begin{array}{r} \text{T O} \\ 90 \\ -31 \\ \hline \\ \hline \end{array}$	(4) $\begin{array}{r} \text{T O} \\ 76 \\ -47 \\ \hline \\ \hline \end{array}$
(5) $\begin{array}{r} \text{T O} \\ 80 \\ -52 \\ \hline \\ \hline \end{array}$	(6) $\begin{array}{r} \text{T O} \\ 42 \\ -24 \\ \hline \\ \hline \end{array}$	(7) $\begin{array}{r} \text{T O} \\ 67 \\ -48 \\ \hline \\ \hline \end{array}$	(8) $\begin{array}{r} \text{T O} \\ 55 \\ -28 \\ \hline \\ \hline \end{array}$
(9) $\begin{array}{r} \text{T O} \\ 80 \\ -32 \\ \hline \\ \hline \end{array}$	(10) $\begin{array}{r} \text{T O} \\ 75 \\ -57 \\ \hline \\ \hline \end{array}$	(11) $\begin{array}{r} \text{T O} \\ 89 \\ -78 \\ \hline \\ \hline \end{array}$	(12) $\begin{array}{r} \text{T O} \\ 70 \\ -51 \\ \hline \\ \hline \end{array}$

(B) Solve:

(13) $82 - 36 =$ <input type="text"/>	(14) $72 - 18 =$ <input type="text"/>
(15) $53 - 29 =$ <input type="text"/>	(16) $44 - 15 =$ <input type="text"/>
(17) $35 - 27 =$ <input type="text"/>	(18) $90 - 82 =$ <input type="text"/>
(19) $95 - 77 =$ <input type="text"/>	(20) $66 - 49 =$ <input type="text"/>
(21) $37 - 28 =$ <input type="text"/>	(22) $85 - 18 =$ <input type="text"/>

Solve real life problems of subtraction with borrowing

Example 1:

Ayaz has 20 oranges. He sold 7 oranges.

How many oranges are left?

Solution:

Ayaz has 20 oranges

He sells -7 oranges

Left 13 oranges

Method

T	O
$\overset{1}{\cancel{2}} - 0$	$\overset{(10)}{\cancel{0}} - 7$
1	3

Thus $20 - 7 = 13$ oranges left

Example 2:

Rabia is 33 years old and Khalida is 19 years old. What is the difference between the ages of Rabia and Khalida?

Solution:

Age of Rabia 33 years

Age of Khalida -19 years

Difference 14

Method

T	O
$\overset{2}{\cancel{3}} - 1$	$\overset{(10)}{\cancel{3}} - 9$
1	4

Thus $33 - 19 = 14$ is the difference between their ages.

Exercise 30

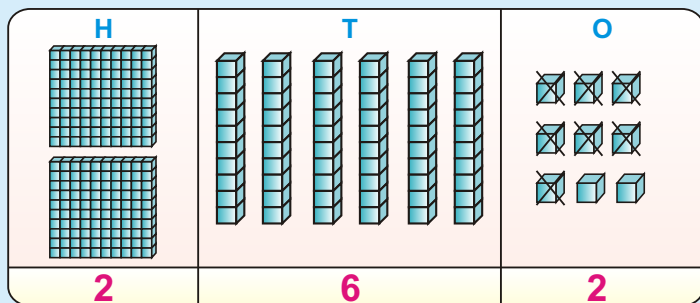
- (1) Danish purchased **32** oranges. His brother ate **3** of them. How many oranges does Danish have now?
- (2) Zarina had **23** hens and she gave **5** to her sister. How many hens are left with her?
- (3) Faraz has **12** kites of red and blue colour. If **7** of these are red. How many kites are of blue colour?
- (4) Nadeem earned **15** points in racing. He needs **32** points to win. How many more points he must earn to win?
- (5) Areeba found **45** snail shells on sea shore. She uses **18** of these for making a pattern. How many snail shells are left there?
- (6) Kanwal had **25** flowers. Only **16** used to make for bucket. How many flowers does she have?
- (7) Mr. Kareem planted **32** radish seeds. The birds ate **8** of them. How many radish seeds are left?
- (8) Paras has **82** sweets. Her brother has **35** fewer than Paras. How many sweets does her brother have?
- (9) Bisma purchased **36** bananas. Her sister took **18** of them. How many bananas did left with Bismah ?
- (10) Saleem had **33** parrots, he gave **24** to his brother. How many parrots he had left?

Subtraction of 3 digit numbers without borrowing

Subtract ones from 3-digit numbers without borrowing

Example: Subtract 7 from 269.

Solution:



H	T	O
2	6	9
<hr/>		
		7
<hr/>		
2	6	2

Thus $269 - 7 = \boxed{262}$

Exercise 31

(A) Subtract the following:

(1)

H	T	O
3	8	1
<hr/>		
		1
<hr/>		

(2)

H	T	O
4	5	5
<hr/>		
		4
<hr/>		

(3)

H	T	O
3	6	9
<hr/>		
		6
<hr/>		

(4)

H	T	O
5	7	8
<hr/>		
		7
<hr/>		

(5)

H	T	O
7	4	6
<hr/>		
		5
<hr/>		

(6)

H	T	O
6	3	7
<hr/>		
		3
<hr/>		

(7)

H	T	O
8	6	8
<hr/>		
		5
<hr/>		

(8)

H	T	O
7	7	9
<hr/>		
		3
<hr/>		

(B) Tick (✓) the correct and cross (✗) the incorrect:

			Correct	Incorrect
(1)	$119 - 2 =$	$\boxed{117}$	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2)	$507 - 5 =$	$\boxed{502}$	<input type="checkbox"/>	<input type="checkbox"/>
(3)	$313 - 2 =$	$\boxed{315}$	<input type="checkbox"/>	<input type="checkbox"/>
(4)	$429 - 7 =$	$\boxed{322}$	<input type="checkbox"/>	<input type="checkbox"/>
(5)	$738 - 4 =$	$\boxed{424}$	<input type="checkbox"/>	<input type="checkbox"/>

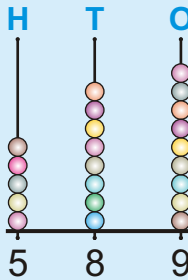
Subtract 2-digit numbers from 3-digit numbers without borrowing

Example: Solve $589 - 38$

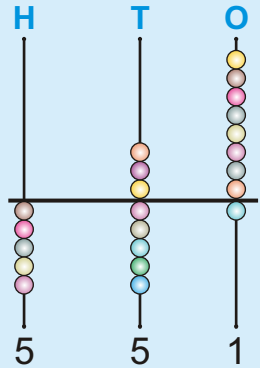
Solution:

H	T	O
5	8	9
-	3	8
<hr/>		
5	5	1

The abacus shows the number 589



After Subtraction



Exercise 32

(A) Solve:

(1)
$$\begin{array}{r} \text{H T O} \\ 675 \\ - 64 \\ \hline \end{array}$$

(2)
$$\begin{array}{r} \text{H T O} \\ 487 \\ - 76 \\ \hline \end{array}$$

(3)
$$\begin{array}{r} \text{H T O} \\ 399 \\ - 88 \\ \hline \end{array}$$

(4)
$$\begin{array}{r} \text{H T O} \\ 431 \\ - 20 \\ \hline \end{array}$$

(5)
$$\begin{array}{r} \text{H T O} \\ 888 \\ - 88 \\ \hline \end{array}$$

(6)
$$\begin{array}{r} \text{H T O} \\ 567 \\ - 60 \\ \hline \end{array}$$

(7)
$$\begin{array}{r} \text{H T O} \\ 978 \\ - 43 \\ \hline \end{array}$$

(8)
$$\begin{array}{r} \text{H T O} \\ 336 \\ - 23 \\ \hline \end{array}$$

(B) Solve and match the correct answer from column 'A' to column 'B':

Column 'A'

Column 'B'

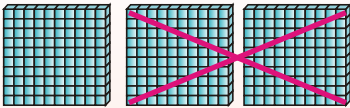
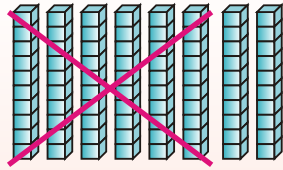
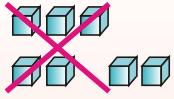
(1)	$125 - 20 =$	<input type="text"/>
(2)	$235 - 14 =$	<input type="text"/>
(3)	$385 - 71 =$	314
(4)	$566 - 36 =$	<input type="text"/>
(5)	$666 - 66 =$	<input type="text"/>

<input type="text"/>	$= 561 - 31$
<input type="text"/>	$= 137 - 32$
<input type="text"/>	$= 677 - 77$
<input type="text"/>	$= 247 - 26$
314	$= 395 - 81$

Subtract 3-digit numbers from 3-digit numbers without borrowing

Example: Solve $387 - 265$

Solution:

H T O	H	T	O
$\begin{array}{r} 387 \\ -265 \\ \hline \end{array}$			
122	1	2	2

Hence $387 - 265 = 122$

Exercise 33

(A) Find the difference:

(1)
$$\begin{array}{r} \text{H T O} \\ 276 \\ -163 \\ \hline \end{array}$$

(2)
$$\begin{array}{r} \text{H T O} \\ 369 \\ -232 \\ \hline \end{array}$$

(3)
$$\begin{array}{r} \text{H T O} \\ 666 \\ -643 \\ \hline \end{array}$$

(4)
$$\begin{array}{r} \text{H T O} \\ 725 \\ -304 \\ \hline \end{array}$$

(5)
$$\begin{array}{r} \text{H T O} \\ 999 \\ -444 \\ \hline \end{array}$$

(6)
$$\begin{array}{r} \text{H T O} \\ 883 \\ -262 \\ \hline \end{array}$$

(7)
$$\begin{array}{r} \text{H T O} \\ 556 \\ -312 \\ \hline \end{array}$$

(8)
$$\begin{array}{r} \text{H T O} \\ 428 \\ -115 \\ \hline \end{array}$$

(B) Solve:

(1) $257 - 141 = \square$

(2) $385 - 383 = \square$

(3) $467 - 157 = \square$

(4) $500 - 400 = \square$

(5) $611 - 600 = \square$

(6) $733 - 730 = \square$

Solve real life problems of subtraction without borrowing



Activity Saima bought a pair of shoes for Rs 238. Raza bought a pair of shoes for Rs 225. What is the difference in paid amounts?

Solution:

	Rupees
Saima paid	238
Raza paid	– 225
Difference	<u>013</u>

H	T	O
2	3	8
–	2	5
<hr/>		
0	1	3

The difference in price is Rs 13.

Exercise 34

- (1) Nazir scored 137 runs in the cricket match. Saleem scored only 26 runs. What is the difference in both scores?
- (2) There were 256 toffees in the jar. Now there are only 144 toffees. How many toffees are missing?
- (3) Mr. Akram invited 299 peoples in the party. Only 242 people came. How many people did not come to the party?
- (4) The Rizwan book store purchased 986 books. The next day, 763 books out of them were sold. How many left?
- (5) One of the book shelves can hold 265 books. A store keeper puts 153 books on the shelf. How many more books can be put on the shelf?
- (6) Kiran had Rs 765. She spent Rs 545 on clothes. How much money had left?
- (7) Farah used 273 roses and 62 tulips for a bouquet. How many more roses than tulips she used?

Subtraction of 3-digit numbers with borrowing

Subtract ones from 3-digit numbers with borrowing

Example 1: Solve $841 - 9$

Solution:

Ones are subtracted from ones

Step 1: 9 ones can not be taken away from 1 ones borrow 1 tens.

1 ten = 10 ones

Therefore $10 + 1 = 11$ ones

Subtraction of ones: $11 - 9 = 2$ ones, write 2 at ones place.

Step 2: After borrowing one tens

we get 4 tens - 1 tens = 3 tens

There is 8 at hundreds place.

Thus $841 - 9 = \boxed{832}$

H	T	O
8	4	1
—		9



H	T	O
8	3 4	¹⁰ 1
—		9
		2

H	T	O
8	3 4	¹⁰ 1
—		9
8	3	2

Exercise 35

(A) Solve:

(1)	H	T	O
	3	2	5
	—		9

(2)	H	T	O
	4	3	3
	—		7

(3)	H	T	O
	5	7	1
	—		4

(4)	H	T	O
	7	3	0
	—		8

(5)	H	T	O
	9	0	2
	—		6

(6)	H	T	O
	8	0	5
	—		7

(B) Complete:

(1) $552 - 3 = \boxed{}$

(2) $902 - 8 = \boxed{}$

(3) $303 - 5 = \boxed{}$

(4) $507 - 9 = \boxed{}$

(5) $685 - 8 = \boxed{}$

(6) $703 - 4 = \boxed{}$

Subtract 2-digit numbers from 3-digit numbers with borrowing

Example : Solve $739 - 64$

Solution:

Write the numbers in place value form.

$739 = 7 \text{ hundreds} + 3 \text{ tens} + 9 \text{ ones}$

Or $739 = 700 + 30 + 9$

$64 = 6 \text{ tens} + 4 \text{ ones}$

or $64 = 60 + 4$

H	T	O
7	3	9
—	6	4

Step 1:

Subtract ones from ones

$9 \text{ ones} - 4 \text{ ones} = 5 \text{ ones}$

Write 5 at ones place

H	T	O
7	3	9
—	6	4
		5

Step 2:

Subtract tens from tens.

6 can not be taken away from 3.

Therefore borrow one hundred for tens.

$1 \text{ hundred} = 10 \text{ tens}$

Now subtract 6 tens from 13 tens

$13 \text{ tens} - 6 \text{ tens} = 7 \text{ tens}$

Write 7 at tens place

H	T	O
6 7	¹⁰ 3	9
—	6	4
	7	5

Step 3:

After borrowing 1 hundred from 7 hundreds.

6 hundred is left.

Finally subtract hundreds from hundreds.

$6 \text{ hundreds} - 0 \text{ hundreds} = 6 \text{ hundreds}$

Write 6 at hundreds place

H	T	O
6 7	¹⁰ 3	9
—0	6	4
6	7	5

Thus $739 - 64 = \boxed{675}$



Activity

Solve.

$$900 - 84 = \boxed{}$$

H	T	O
9	0	0
-	8	4
<hr/>		

Step 1:
Subtract ones



H	T	O
8	9	0
-	8	4
<hr/>		

Step 2:



H	T	O
8	9	0
-	8	4
<hr/>		

Step 3:
Subtract tens



H	T	O
8	9	0
-	8	4
<hr/>		

Thus $900 - 84 = \boxed{}$

Exercise 36

(A) Solve:

(1)	H	T	O
	2	3	5
	-	4	6
<hr/>			

(2)	H	T	O
	5	6	7
	-	8	8
<hr/>			

(3)	H	T	O
	3	8	8
	-	9	9
<hr/>			

(4)	H	T	O
	6	6	6
	-	7	7
<hr/>			

(5)	H	T	O
	6	5	3
	-	9	2
<hr/>			

(6)	H	T	O
	7	6	0
	-	8	1
<hr/>			

(7)	H	T	O
	7	0	3
	-	9	5
<hr/>			

(8)	H	T	O
	3	3	4
	-	9	8
<hr/>			

(9)	H	T	O
	4	8	5
	-	7	7
<hr/>			

(B) Complete:

(1) $330 - 45 = \boxed{}$

(2) $560 - 81 = \boxed{}$

(3) $446 - 97 = \boxed{}$

(4) $600 - 96 = \boxed{}$

Subtract 3-digit numbers from 3-digit numbers with borrowing

Example: Subtract 294 from 582

Solution: Solve $582 - 294 =$

Step 1: Subtraction of ones.

4 ones can not be taken away from 2 ones

Borrow 1 ten from 8 tens.

Add 10 ones to 2 ones, $10 + 2 = 12$ ones

$12 - 4 = 8$ ones, write 8 at ones place.

H	T	O
5	8 ⁷	2 ¹⁰
-2	9	4
		8

Step 2: Subtraction of tens

After borrowing 1 ten from 8 tens,

7 tens are left. Since 9 can't be taken away from 7 tens,

So we are borrowing 1 hundred

from 5 hundreds, 4 hundreds are left

5 hundreds = 4 hundreds + 10 tens

Add 10 tens and 7 tens, $10 + 7 = 17$ tens

$17 - 9 = 8$ tens

Therefore, write 8 at tens place

H	T	O
5 ⁴	7 ¹⁰	2 ¹⁰
-2	9	4
	8	8

Step 3: Subtraction of hundreds

After borrowing 1 hundred,

from 5 hundreds, we are left

with 4 hundreds. $4 - 2 = 2$ hundreds.

Write 2 at hundreds place.

H	T	O
4 ²	10 ⁷	2 ¹⁰
-2	9	4
2	8	8

Thus $582 - 294 =$

Exercise 37**(A) Solve:**

(1)

H	T	O
4	2	6
<hr/>		
2	8	7
<hr/>		
<hr/>		

(2)

H	T	O
3	4	5
<hr/>		
1	8	6
<hr/>		
<hr/>		

(3)

H	T	O
4	6	2
<hr/>		
3	7	8
<hr/>		
<hr/>		

(4)

H	T	O
7	1	2
<hr/>		
4	2	5
<hr/>		
<hr/>		

(5)

H	T	O
8	6	0
<hr/>		
3	8	6
<hr/>		
<hr/>		

(6)

H	T	O
8	2	2
<hr/>		
2	7	8
<hr/>		
<hr/>		

(7)

H	T	O
5	4	2
<hr/>		
2	5	6
<hr/>		
<hr/>		

(8)

H	T	O
6	1	3
<hr/>		
3	3	6
<hr/>		
<hr/>		

(9)

H	T	O
9	5	3
<hr/>		
6	2	5
<hr/>		
<hr/>		

(B) Complete:

(1) $874 - 287 = \square$

(2) $847 - 758 = \square$

(3) $621 - 388 = \square$

(4) $513 - 239 = \square$

(5) $626 - 378 = \square$

(6) $931 - 832 = \square$

Solve real life problems of subtraction with borrowing

Example: There are 872 books in the library, students borrowed 198 of them. How many books are left behind?

Solution:

In Library	$\begin{array}{r} 872 \\ -198 \\ \hline 674 \end{array}$	books
Students borrowed		books
Left behind		books

H	T	O
⁷ 8	¹⁰ 6	¹⁰ 2
-1	9	8
6	7	4

Hence $872 - 198 = \boxed{674}$

Exercise 38

- (1) Ali has 125 chickens, 9 of them are sold. How many chickens are left?
- (2) There are 135 shops in a shopping mall. On Friday only 7 shops are open. How many shops are closed?
- (3) There are 650 students in a school. If 153 students are in primary section. How many students are in secondary section?
- (4) There are 364 students in girls school. 57 students were absent on last Monday. How many students were present on that day?
- (5) A mango tree has 137 mangoes. 47 mangoes are picked by children. How many mangoes are left on the tree?
- (6) There are 932 books in the library. Students borrowed 155 books. How many books are left behind?
- (7) Faraz has Rs 172 in his pocket. He wants to buy a toy car of Rs 181. How much more money he needs to buy a toy car?

ADDITION AND SUBTRACTION

Solve simple problems regarding addition and subtraction with carrying/borrowing in mixed form

Example 1: After adding 4 more books in my bag, I get 12 books. How many books I had before?

Solution

T	O
0 1	10 2
-	4
	8

Verification

8
+4
12

$8 + 4 = 12$

Thus number of books are **8**

Example 2: Nida subtract Rs 25 from amount of Sara, Nida gets Rs 375. What is Sara's amount?

Solution

H	T	O
	2	5
+	3	7
	7	5
	4	0

Verification

400
-25
375

$400 - 25 = 375$

Thus Sara's amount is Rs **400**

Exercise 39

- (1) Iqbal add my number to **7**, Iqbal gets **20**. What is my number?
- (2) Anis subtract **14** from Nazir's number, Anis gets **30**. What is Nazir's number?
- (3) You add my number to **250**, you get **700**. What is my number?
- (4) Salma subtract **320** from Haleema's number, Salma gets **800**. What is Haleema's number?
- (5) Akhtar add Aslam's amount to Rs **80**, Akhtar get Rs **300**. What is Aslam's amount?

MULTIPLICATION

Recognize multiplication as repeated addition and use of multiplication symbol “x”



Four bicycles are given. Each bicycle has 2 wheels in all.

What is the number of wheels in all?

We do it simply by adding 2 repeatedly.

$$2 + 2 + 2 + 2 = 8$$

Or Four times 2 is written as:

$$4 \times 2 = 8$$

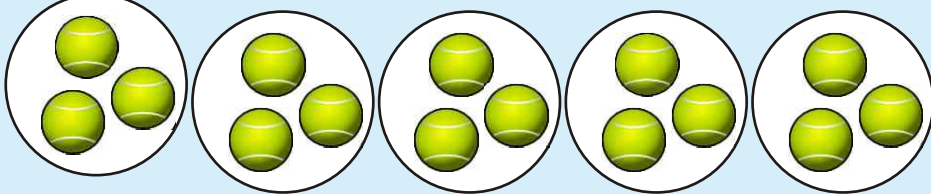
Read as 2 multiply by 4 is equal to 8.

Repeated addition is called “Multiplication”.

Here symbol “x” is called the sign of multiplication.



Activity 1 Count the balls and write.



$$\underline{\quad\quad} + \underline{\quad\quad} + \underline{\quad\quad} + \underline{\quad\quad} + \underline{\quad\quad} = \boxed{\quad\quad}$$

$$5 \text{ times } 3 = \boxed{\quad\quad}$$

Or

$$5 \times 3 = \boxed{\quad\quad}$$

Teacher's Note

Teacher should explain the concept of multiplication through repeated addition by using available objects.



Activity 2

Count the pencils.



$$\boxed{} + \boxed{} = \boxed{}$$

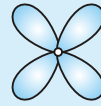
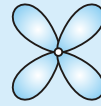
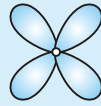
$$2 \text{ times } 7 = \boxed{}$$

$$\text{Or } 2 \times 7 = \boxed{}$$



Activity 3

How many petals altogether?



$$\boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} = \boxed{}$$

$$\underline{\hspace{2cm}} \text{ times } \underline{\hspace{2cm}} = \boxed{}$$

$$\text{Or } 5 \times 4 = \boxed{}$$

Exercise 40

Solve:

$$4 \times 2 = \boxed{2} + \boxed{2} + \boxed{2} + \boxed{2} = \boxed{8}$$

$$3 \times 2 = \boxed{} + \boxed{} + \boxed{} = \boxed{}$$

$$5 \times 10 = \boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} = \boxed{}$$

$$5 \times 5 = \boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} = \boxed{}$$

$$4 \times 5 = \boxed{} + \boxed{} + \boxed{} + \boxed{} = \boxed{}$$

$$6 \times 2 = \boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} = \boxed{}$$

$$5 \times 2 = \boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} = \boxed{}$$

$$7 \times 2 = \boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} + \boxed{} = \boxed{}$$

Complete number sequences in steps of 2, 3, 4, 5 and 10 and develop multiplication tables of 2, 3, 4, 5, and 10 till the multiplication 10×10

Counting by 2s

Ali is jumping in 2s.



Here we have counted the numbers by 2s as:

2, 4, 6, 8, 10, 12, 14, ... and so on.



Activity 1 Complete by counting 2s.

2			8	
	14	16		
22				30



Activity 2 How many flowers in all?



3 times 2 = Or $3 \times 2 =$



Activity 3 How many buttons in all?



4 times 2 = Or $\underline{\quad} \times \underline{\quad} =$

Table of 2.

Addition table	Way of reading	Multiplication table
2	1 two is 2	$1 \times 2 = 2$
$2 + 2$	2 twos are 4	$2 \times 2 = 4$
$2 + 2 + 2$	3 twos are 6	$3 \times 2 = 6$
$2 + 2 + 2 + 2$	4 twos are 8	$4 \times 2 = 8$
$2 + 2 + 2 + 2 + 2$	5 twos are 10	$5 \times 2 = 10$
$2 + 2 + 2 + 2 + 2 + 2$	6 twos are 12	$6 \times 2 = 12$
$2 + 2 + 2 + 2 + 2 + 2 + 2$	7 twos are 14	$7 \times 2 = 14$
$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$	8 twos are 16	$8 \times 2 = 16$
$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$	9 twos are 18	$9 \times 2 = 18$
$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$	10 twos are 20	$10 \times 2 = 20$



Activity

Complete and read aloud the table of 2.

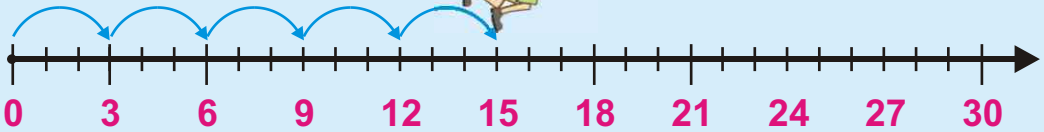
x	1	2	3	4	5	6	7	8	9	10
2	2	4								

Teacher's Note

Teacher should demonstrate the table of 2 in the classroom. Make groups of children in twos and to develop the table of two.

Counting by 3s:

Ali is jumping in 3s.



Here we have counted the numbers by threes as:
3, 6, 9, 12, 15, 18 and so on.



Activity 1

Complete by counting 3s.



Activity 2

How many balloons in all?



$$4 \text{ times } 3 = \boxed{} \text{ Or } 4 \times 3 = \boxed{}$$



Activity 3

How many bananas in all?



$$6 \text{ times } 3 = \boxed{} \text{ Or } 6 \times 3 = \boxed{}$$

Table of 3.

Addition table	Way of reading	Multiplication table
3	1 three is 3	$1 \times 3 = 3$
$3 + 3$	2 threes are 6	$2 \times 3 = 6$
$3 + 3 + 3$	3 threes are 9	$3 \times 3 = 9$
$3 + 3 + 3 + 3$	4 threes are 12	$4 \times 3 = 12$
$3 + 3 + 3 + 3 + 3$	5 threes are 15	$5 \times 3 = 15$
$3 + 3 + 3 + 3 + 3 + 3$	6 threes are 18	$6 \times 3 = 18$
$3 + 3 + 3 + 3 + 3 + 3 + 3$	7 threes are 21	$7 \times 3 = 21$
$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$	8 threes are 24	$8 \times 3 = 24$
$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$	9 threes are 27	$9 \times 3 = 27$
$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$	10 threes are 30	$10 \times 3 = 30$



Activity

Complete and read aloud the table of 3.

x	1	2	3	4	5	6	7	8	9	10
3	3									

Counting by 4s:

Ali is jumping in 4s.



Here we have counted the numbers by fours as:
4, 8, 12, 16, 20 and so on.



Activity 1 Complete by counting 4s.



Activity 2 How many wheels in 6 cars?



6 times 4 = Or $6 \times 4 =$



Activity 3 How many eggs?



5 times 4 = Or $5 \times 4 =$

Table of 4.

Addition table	Way of reading	Multiplication table
$\boxed{4}$	1 four is 4	$1 \times 4 = 4$
$\boxed{4} + \boxed{4}$	2 fours are 8	$2 \times 4 = 8$
$\boxed{4} + \boxed{4} + \boxed{4}$	3 fours are 12	$3 \times 4 = 12$
$\boxed{4} + \boxed{4} + \boxed{4} + \boxed{4}$	4 fours are 16	$4 \times 4 = 16$
$\boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4}$	5 fours are 20	$5 \times 4 = 20$
$\boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4}$	6 fours are 24	$6 \times 4 = 24$
$\boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4}$	7 fours are 28	$7 \times 4 = 28$
$\boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4}$	8 fours are 32	$8 \times 4 = 32$
$\boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4}$	9 fours are 36	$9 \times 4 = 36$
$\boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4} + \boxed{4}$	10 fours are 40	$10 \times 4 = 40$



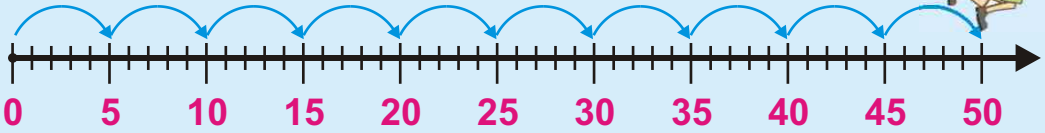
Activity

Complete and read aloud the table of 4.

x	1	2	3	4	5	6	7	8	9	10
4	4									

Counting by 5s:


Ali is jumping in 5s.

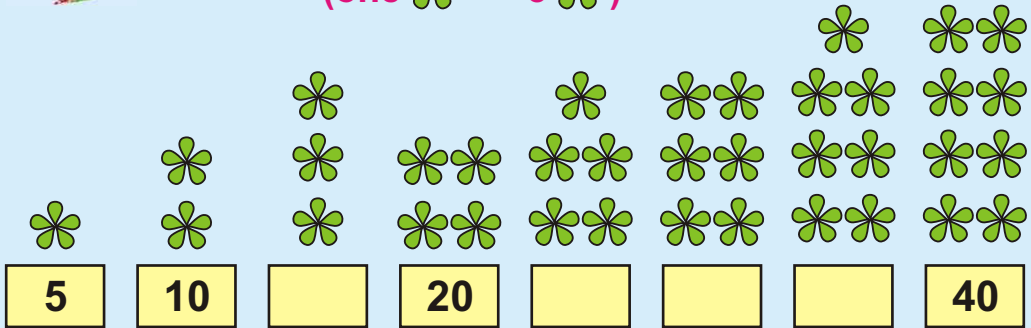


Here we have counted the numbers by fives as:

5, 10, 15, 20, 25 and so on.



Activity 1 Count by fives and write.
(one  = 5 )



Activity 2 Complete the table by counting fives.

5		15			30			45	
55				75			90		
105			120			135			150



Activity 3 Start from 5, write the numbers counting by fives upto 60.

5	10									60
---	----	--	--	--	--	--	--	--	--	----

Table of 5.

Addition table	Way of reading	Multiplication table
5	1 five is 5	$1 \times 5 = 5$
5 + 5	2 fives are 10	$2 \times 5 = 10$
5 + 5 + 5	3 fives are 15	$3 \times 5 = 15$
5 + 5 + 5 + 5	4 fives are 20	$4 \times 5 = 20$
5 + 5 + 5 + 5 + 5	5 fives are 25	$5 \times 5 = 25$
5 + 5 + 5 + 5 + 5 + 5	6 fives are 30	$6 \times 5 = 30$
5 + 5 + 5 + 5 + 5 + 5 + 5	7 fives are 35	$7 \times 5 = 35$
5 + 5 + 5 + 5 + 5 + 5 + 5 + 5	8 fives are 40	$8 \times 5 = 40$
5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5	9 fives are 45	$9 \times 5 = 45$
5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5	10 fives are 50	$10 \times 5 = 50$



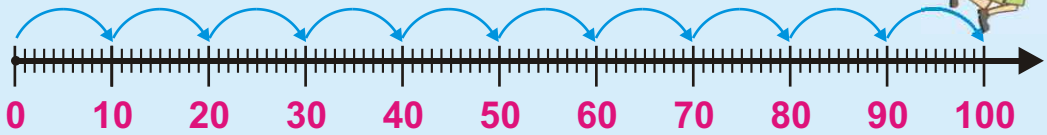
Activity

Complete and read aloud the table of 5.

x ← 1	2	3	4	5	6	7	8	9	10
5 → 5									

Counting by 10s:

Ali is jumping in 10s.



Here we have counted the numbers by tens as:

10, 20, 30, 40, 50, 60 and so on.



Activity 1 Count by tens and write.

10	20			50			80
		110					160
		190		210			
250			280			310	
		350					400



Activity 2 Start from 10, write the numbers counting by tens upto 120.

10	20									120
----	----	--	--	--	--	--	--	--	--	-----

Table of 10.

Addition table	Way of reading	Multiplication table
10	1 ten is 10	$1 \times 10 = 10$
$10 + 10$	2 tens are 20	$2 \times 10 = 20$
$10 + 10 + 10$	3 tens are 30	$3 \times 10 = 30$
$10 + 10 + 10 + 10$	4 tens are 40	$4 \times 10 = 40$
$10 + 10 + 10 + 10 + 10$	5 tens are 50	$5 \times 10 = 50$
$10 + 10 + 10 + 10 + 10 + 10$	6 tens are 60	$6 \times 10 = 60$
$10 + 10 + 10 + 10 + 10 + 10 + 10$	7 tens are 70	$7 \times 10 = 70$
$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10$	8 tens are 80	$8 \times 10 = 80$
$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10$	9 tens are 90	$9 \times 10 = 90$
$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10$	10 tens are 100	$10 \times 10 = 100$



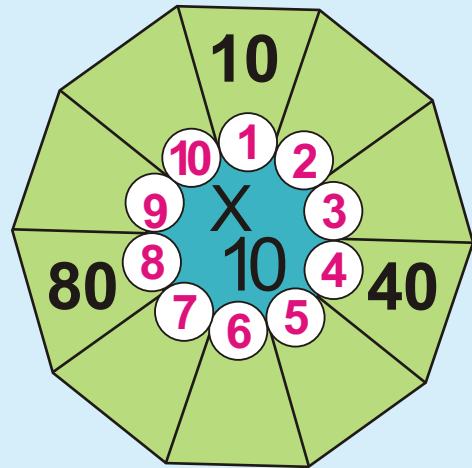
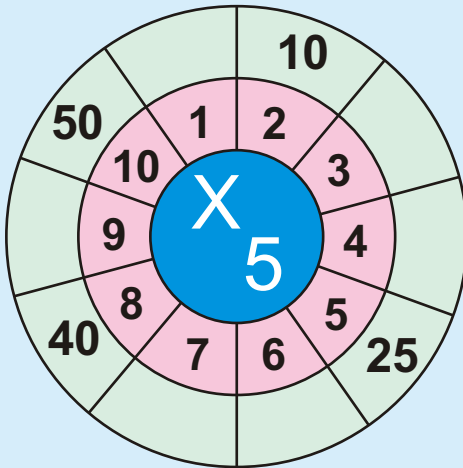
Activity

Complete and read aloud the table of 10.

x	1	2	3	4	5	6	7	8	9	10
10	10									

Exercise 41

(1) Complete these tables:



1	X 2	2
2		
3		
4		
5		
6		
7		
8		
9		
10		

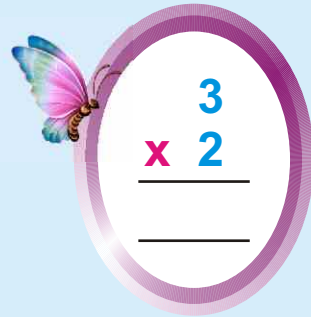
1	X 3	3
2		
3		
4		
5		
6		
7		
8		
9		
10		

1	X 4	4
2		
3		
4		
5		
6		
7		
8		
9		
10		

(2) Fill in the boxes:

- | | | |
|---|---|--|
| (1) $7 \times 5 =$ <input type="text"/> | (2) $4 \times 2 =$ <input type="text"/> | (3) $9 \times 3 =$ <input type="text"/> |
| (4) $9 \times 3 =$ <input type="text"/> | (5) $8 \times 2 =$ <input type="text"/> | (6) $8 \times 3 =$ <input type="text"/> |
| (7) $10 \times 5 =$ <input type="text"/> | (8) $6 \times 5 =$ <input type="text"/> | (9) $5 \times 5 =$ <input type="text"/> |
| (10) $8 \times 3 =$ <input type="text"/> | (11) $4 \times 10 =$ <input type="text"/> | (12) $6 \times 4 =$ <input type="text"/> |
| (13) $5 \times 10 =$ <input type="text"/> | (14) $8 \times 4 =$ <input type="text"/> | (15) $9 \times 2 =$ <input type="text"/> |
| (16) $8 \times 7 =$ <input type="text"/> | (17) $7 \times 10 =$ <input type="text"/> | (18) $10 \times 10 =$ <input type="text"/> |

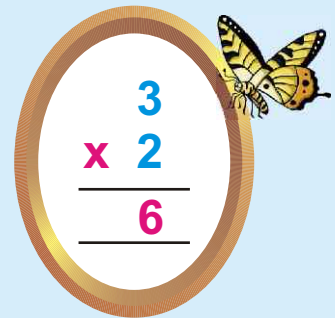
Multiply numbers within multiplication table**Example 1:** Solve 3×2 3×2 can also be written as:


$$\begin{array}{r} 3 \\ \times 2 \\ \hline \\ \hline \end{array}$$

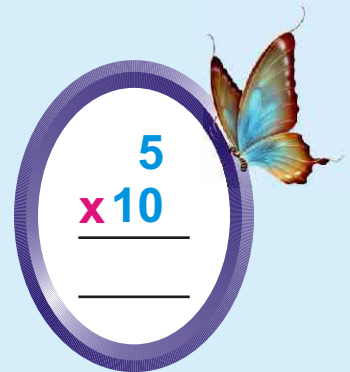
Multiply 3 by 2,
we add 3, 2 times
we get 6

Or read the table of 2 upto 3, we get 6.

So, $3 \times 2 = 6$


$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \\ \hline \end{array}$$

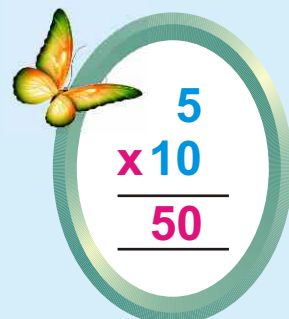
Example 2: Solve 5×10 5×10 can also be written as:


$$\begin{array}{r} 5 \\ \times 10 \\ \hline \\ \hline \end{array}$$

Multiply 5 by 10
we add 10, 5 times

Or read the table of 10 upto 5,
we get 50.

So, $5 \times 10 = 50$


$$\begin{array}{r} 5 \\ \times 10 \\ \hline 50 \\ \hline \end{array}$$

Exercise 42

(1) Solve the following.

$$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 10 \\ \hline \end{array}$$

(2) Solve:

(1)

$$4 \times 2 = \square$$

(2)

$$2 \times 3 = \square$$

(3)

$$4 \times 4 = \square$$

(4)

$$3 \times 5 = \square$$

(5)

$$5 \times 5 = \square$$

(6)

$$2 \times 6 = \square$$

(4) Fill in the blanks:

$$3 \times 2 = \square$$

$$7 \times 5 = \square$$

$$8 \times 2 = \square$$

$$3 \times 4 = \square$$

$$5 \times 2 = \square$$

$$3 \times 3 = \square$$

$$9 \times 3 = \square$$

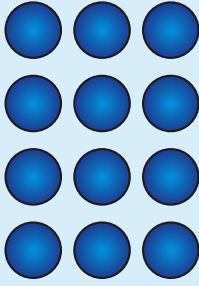
$$8 \times 4 = \square$$

$$6 \times 4 = \square$$

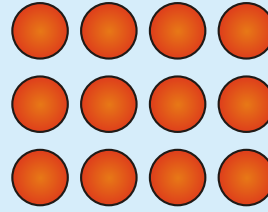
(5) Start from 30, write the numbers counting by 3s upto 60.

(6) Start from 50, write the numbers counting by 10s upto 150.

Verify commutative property of multiplication



and



As $3 \times 4 = 12$

$4 \times 3 = 12$

In multiplication, two numbers can be put in any order. The answer will remain the same. This property is known as the **commutative property of multiplication**.

Example: $2 \times 4 = \boxed{8} = 4 \times 2$
 $6 \times 3 = \boxed{18} = 3 \times 6$

Exercise 43

Verify and complete these as commutative property of multiplication:

- (1) $5 \times 4 = 4 \times \boxed{}$
- (2) $7 \times 3 = 3 \times \boxed{}$
- (3) $6 \times 5 = 5 \times \boxed{}$
- (4) $4 \times 2 = 2 \times \boxed{}$
- (5) $3 \times 7 = \boxed{} \times 3$
- (6) $2 \times 8 = \boxed{} \times 2$
- (7) $9 \times 3 = \boxed{} \times 9$
- (8) $\boxed{} \times 5 = 5 \times 4$
- (9) $\boxed{} \times 10 = 10 \times 6$

Solve real life problems on multiplication

Example: The price of one balloon is Rs 5. Find the price of 3 balloons.

Solution:

The price of 1 balloon is 5 rupees.

The price of 3 balloons is 5×3 rupees.

Multiply **3** by **5**,

Add 5, 3 times

we read the table of **3** up to **5** times, we get **15**.

So, $3 \times 5 = 15$

Hence price of **3** balloons is Rs **15**.

**Exercise 44**

(A) Answer the following:

- (1) The price of one eraser is **Rs 6**. Find the price of **5** erasers.
- (2) In a plaza, there are **4** rooms in one flat. Find the number of rooms in **8** such flats.
- (3) A ceiling fan has **3** wings. How many wings have **10** fans?
- (4) A bicycle has **2** wheels. How many wheels have **9** bicycles?
- (5) A cow has **4** legs. How many legs have **3** cows?
- (6) A child has 10 fingers in his both hands. How many fingers have 6 children?
- (7) A shirt has **7** buttons. Find the number of buttons in **5** shirts.
- (8) A child has **2** arms. How many arms have **7** children?
- (9) In an examination, every child was given **4** pencils. How many pencils have **5** children?

DIVISION

Recognize division as successive subtraction and use of division symbol “ ”

Example 1: 8 Sweets are distributed among 4 girls in such a way that every one gets 2 sweets.

2 sweets are given to Sara $8 - 2 = 6$ (6 left)
 2 sweets are given to Shumaila $6 - 2 = 4$ (4 left)
 2 sweets are given to Uzma $4 - 2 = 2$ (2 left)
 The last 2 sweets are given to Bushra $2 - 2 = 0$ (None left behind)
 4 times we have subtracted 2 from 8.

We can write as: $8 \div 2 = 4$

The process of repeated subtraction is called division.
 The symbol of division is “ ”.

Division is reverse process of multiplication

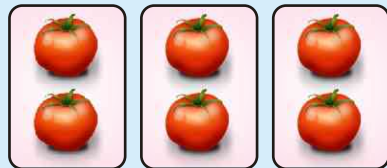
$4 \times 2 = 8$ and $8 \div 2 = 4$

Example 2: Look at these pictures.



6 tomatoes divided in 3 boxes, we get 2 tomatoes in each.

$6 \div 3 = 2$



3 boxes of 2 tomatoes each, it makes 6.

Now 6 tomatoes divided in 2 boxes, we get 3 tomatoes in each.



$6 \div 2 = 3$

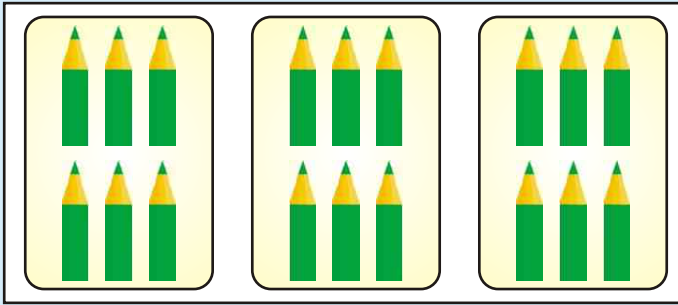
2 boxes of 3 tomatoes each, it makes 6.

Teacher's Note

Teacher should explain example and count numbers of times, a number is subtracted. This number is the answer.

Divide numbers within the multiplication tables with remainder zero

Example: Solve: 18 ÷ 3



Solution: 18 ÷ 3 = 6

We can also solve as:

Step 1:

Here the number

18 written as **dividend** → $\overline{)18}$

Step 2:

Number 3 will be written as **divisor** → $3\overline{)18}$

Step 3:

Read table of 3 till 18 comes

Now 6 will be written as **quotient** → $\begin{array}{r} 6 \\ 3\overline{)18} \\ \underline{18} \end{array}$

Step 4:

Now subtract the numbers
we get 0 as **remainder** → $\begin{array}{r} 6 \\ 3\overline{)18} \\ \underline{-18} \\ 0 \end{array}$

Thus we get **18 ÷ 3 = 6**

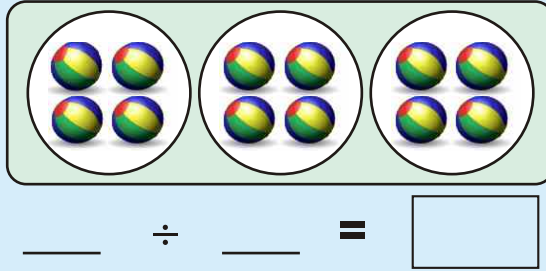
Teacher's Note

Teacher should help the students understand the solved example on blackboard step by step.

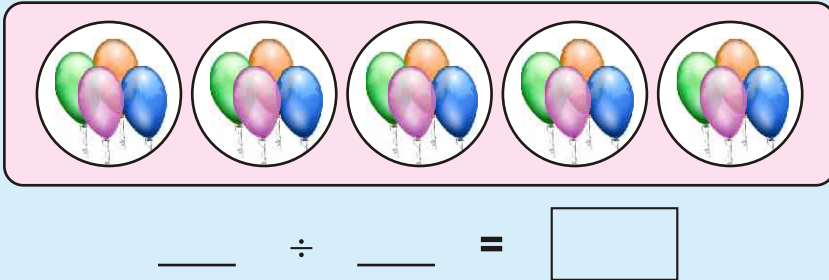
Exercise 45

(A) Solve:

(1)



(2)



(B) Solve:

1 $15 \div 3 =$ 5

2 $16 \div 2 =$

3 $10 \div 2 =$

4 $80 \div 10 =$

5 $16 \div 4 =$

6 $24 \div 3 =$

7 $14 \div 2 =$

8 $45 \div 5 =$

9 $18 \div 3 =$

10 $27 \div 3 =$

11 $50 \div 5 =$

12 $24 \div 3 =$

13 $12 \div 3 =$

14 $18 \div 2 =$

15 $30 \div 3 =$

16 $10 \div 10 =$

(C) Divide:

1

$$\begin{array}{r} 4 \\ 3 \overline{) 12} \\ \underline{-12} \\ 0 \end{array}$$

2

$$3 \overline{) 15}$$

3

$$2 \overline{) 2}$$

4

$$3 \overline{) 24}$$

5

$$2 \overline{) 10}$$

6

$$2 \overline{) 14}$$

7

$$3 \overline{) 27}$$

8

$$4 \overline{) 20}$$

9

$$5 \overline{) 40}$$

10

$$4 \overline{) 36}$$

11

$$5 \overline{) 50}$$

12

$$10 \overline{) 70}$$

13

$$5 \overline{) 40}$$

14

$$4 \overline{) 24}$$

15

$$10 \overline{) 50}$$

Solve real life problems involving division**Example:**

Arif has fixed 4 pictures at one page then how many number of pages will be required for 32 pictures?

Solution:

Total number of pictures = 32

Fixed on one page = 4

Therefore 32 ÷ 4 = 8

$$\begin{array}{r} 8 \\ 4 \overline{) 32} \\ \underline{- 32} \\ 0 \end{array}$$

So, Arif needs 8 pages.

Exercise 46

- (1) 50 sweets were equally divided among 5 children. How many sweets did each child get?
- (2) 18 books are divided equally among 2 girls. How many books did each girl get?
- (3) 30 guests come to attend a party and they sat on chairs equally in 3 rows. Find the number of chairs in each row.
- (4) 15 apples are given to 3 students. Find the number of apples equally divided in each one.
- (5) Rafia has 24 stickers, if 4 stickers can be fixed at one page then how many pages does she need to fix all?
- (6) If 4 packets contain 28 sweets. How many sweets will be in each packet?
- (7) The cost of one pen is Rs 10. How many same pens can be bought for Rs 80?
- (8) If Rafay covers a distance of 20 km in 2 days. How much distance does he cover in one day?

ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION

Solve real life problems (using Pakistani currency as well) involving addition, subtraction, multiplication and division

In class I we have used Pakistani Coins 1, 2 and 5 and Notes of rupees 10, 20, 50, and 100. Here we will learn and use more about Pakistani currency.

This is a **500** Rupees Note

Front



Back



This is a **1000** Rupees Note

Front



Back

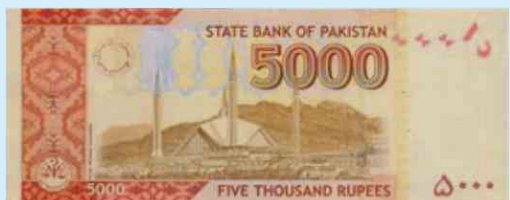


This is a **5000** Rupees Note

Front



Back



Teacher's Note

Teacher should revised the identification of Pakistani currency notes/coins as brain storming activity using real currency.

Addition and Subtraction

Look at the objects available at a store.

<div>325/-</div> 	<div>350/-</div> 	<div>210/-</div> 
<div>499/-</div> 	<div>500/-</div> 	<div>300/-</div> 
<div>395/-</div> 	<div>550/-</div> 	<div>465/-</div> 

Example 1: Find the total cost of a lamp and helicopter

Solution:

Lamp cost	=	Rs 550
Helicopter cost	=	+ Rs 395
Total cost	=	<u>Rs 945</u>

Example 2: How much cost of the school bag is more than the football?

Solution:

School bag cost	=	Rs 465
Football cost	=	- Rs 210
		<u>Rs 255</u>

The school bag cost is Rs 255 more than the football.

Exercise 47

(A) How much do these cost?

$$\begin{array}{r} \text{(1)} \quad \text{Shoes} \quad \text{Rs } 499 \\ \text{Football} \quad + \text{Rs } 210 \\ \hline \text{Total:} \quad \text{Rs } 709 \end{array}$$

$$\begin{array}{r} \text{(3)} \quad \text{Football} \quad \text{Rs } 210 \\ \text{Jeep} \quad + \text{Rs } 500 \\ \hline \text{Total:} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(5)} \quad \text{Lamp} \quad \text{Rs } 550 \\ \text{Toy Car} \quad + \text{Rs } 325 \\ \hline \text{Total:} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(2)} \quad \text{Book} \quad \text{Rs } 350 \\ \text{Doll} \quad + \text{Rs } 300 \\ \hline \text{Total:} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(4)} \quad \text{Helicopter} \quad \text{Rs } 395 \\ \text{Toy Car} \quad + \text{Rs } 325 \\ \hline \text{Total:} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(6)} \quad \text{Jeep} \quad \text{Rs } 500 \\ \text{Doll} \quad + \text{Rs } 300 \\ \hline \text{Total:} \quad \text{Rs} \end{array}$$

(B) Find the difference of prices.

$$\begin{array}{r} \text{(1)} \quad \text{Jeep} \quad \text{Rs } 500 \\ \text{Book} \quad - \text{Rs } 350 \\ \hline \text{Difference} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(3)} \quad \text{Shoes} \quad \text{Rs } 499 \\ \text{Football} \quad - \text{Rs } 210 \\ \hline \text{Difference} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(5)} \quad \text{Jeep} \quad \text{Rs } 500 \\ \text{Football} \quad - \text{Rs } 210 \\ \hline \text{Difference} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(2)} \quad \text{Toy Car} \quad \text{Rs } 325 \\ \text{Doll} \quad - \text{Rs } 300 \\ \hline \text{Difference} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(4)} \quad \text{Helicopter} \quad \text{Rs } 395 \\ \text{Toy Car} \quad - \text{Rs } 325 \\ \hline \text{Difference} \quad \text{Rs} \end{array}$$

$$\begin{array}{r} \text{(6)} \quad \text{Lamp} \quad \text{Rs } 550 \\ \text{Doll} \quad - \text{Rs } 300 \\ \hline \text{Difference} \quad \text{Rs} \end{array}$$

(C) Solve:

- (1) On Monday Farah spends two notes of **Rs 100** and on Tuesday she spends **1** note of **500**. How much does she spend in all?
- (2) Raza bought a football in **Rs 250**, a book in **Rs 135** and a cake in **Rs 350**. How much amount did he pay?
- (3) The price of cake is Rs **365** and the price of chocolate box is Rs **150**. What is the total price of both?
- (4) Abeer has **Rs 100**. She gives to her sister **Rs 25**. How much money is left with her?
- (5) Ahmer buys a bicycle for **Rs 680**. He pays **Rs 500** only. How much more must he pay?
- (6) Sana has **Rs 200**. She spends **Rs 145** on shopping. How much money is left with her?

Multiplication**Example:**

The cost of a pencil is Rs 10. What is the cost of 8 pencils?

Solution:

1 pencil cost	=	10
8 pencils will cost	=	x 8
Total cost	=	80

Thus, The cost of 8 pencils = Rs **80**.

Exercise 48

- (1) The price of a biscuit is Rs 5. What is the cost of 6 such biscuits?
- (2) The cost of an eraser is Rs 8. What is the cost of 4 such erasers?
- (3) The price of a notebook is Rs 10. What is the cost of 9 such notebooks?
- (4) The cost of a packet of chips is Rs 7. What is the cost of 5 such packet of chips?
- (5) The price of a scale is Rs 6. What is the price of 3 such scales?
- (6) The cost of a banana is Rs 9. Find the cost of 2 bananas.

Division:

Example: The cost of 2 pencils is Rs 16. Find the cost of one pencil.

Solution: The cost of 2 pencils is Rs 16

The cost of 1 pencil will be Rs (16 ÷ 2)

16 ÷ 2 = 8 Read table of 2 till we get 16.

2 × 8 = 16

Exercise 49

- (1) The cost of 3 erasers is Rs 18. Find the cost of one eraser.
- (2) The price of 4 ball points is Rs 40. What is the price of one ball point?
- (3) The cost of 5 balls is Rs 35. Find the cost of one ball.
- (4) The cost of 10 brushes is Rs 100. What is the cost one brush?
- (5) The cost of 4 flowers is Rs 16. Find the price of one flower?

MEASUREMENT OF LENGTH, MASS AND CAPACITY

MEASUREMENT OF LENGTH

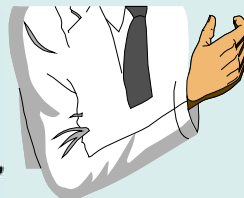
We can measure the length of different objects by using the informal units like handspan, walking step, pencil, stick and pieces of threads etc.



Handspan



Step



Cubit












Foot

Measurement of length of object by using these units is not exact. So, we use units of length which give us exact measurements.



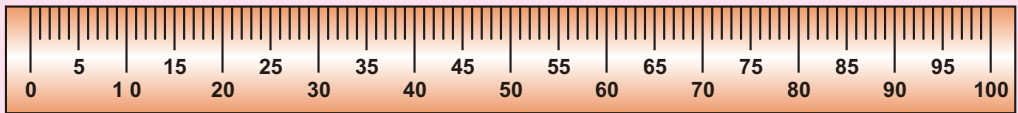
Activity Collect these objects in your classroom.

How many paper clips () used in each case for measuring the objects?

Objects	Measurement
 	<u> 2 </u> 
	<u> </u> 
	<u> </u> 
	<u> </u> 

Recognize, read and write standard units of length including abbreviations

Metre is the basic unit of length. We write “m” for metres. We measure the length of long things in metre. We measure the length of small things in centimetres. We write “cm” for centimetres. A metre is divided into 100 equal parts, each part is equal to 1 cm.

Metre scale

$$1\text{m} = 100\text{cm}$$



Activity 1 Write the correct unit (m or cm) used to measure the following.

(1) Length of a



is measured in

(2) Length of a



is measured in

(3) A piece of measured in



used for your dress is

(4) Height of a



is measured in

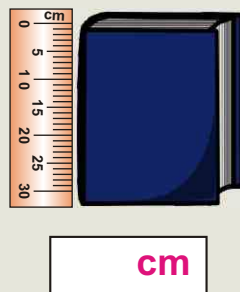
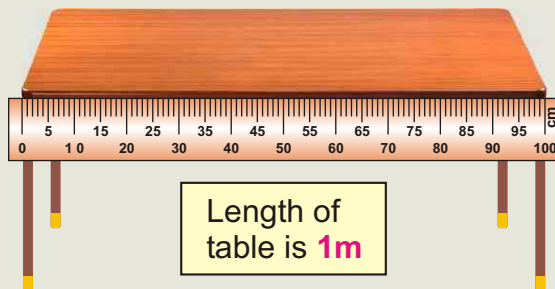
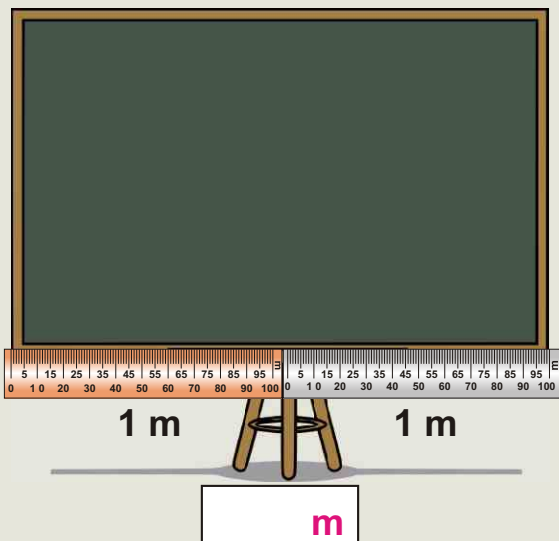
Teacher's Note

Teacher should explain the concept of standard units of measuring length. Teacher should show the metre scale in class and also draw the scale on the wall in the classroom.



Activity 2

Read and write the length of objects.



Exercise 50

(A) Measure the length of objects and write it in centimetres:



(1)

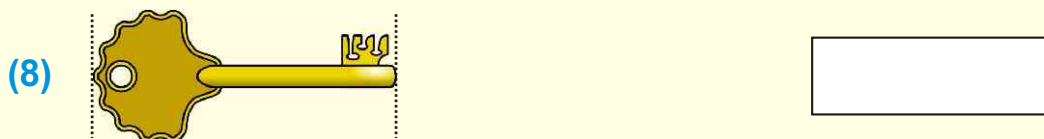
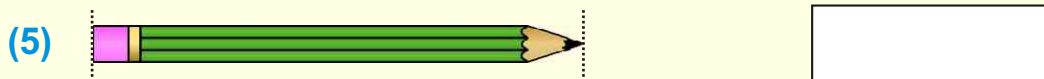


(2)

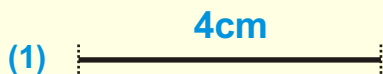


(3)





(B) Measure length of the lines with scale:



(C) Find the correct unit used to measure the following:

(1) The length of the table in your class

(2) The length of your Maths book

(3) The length of your pencil

(4) The length of your eraser

(5) The length of your class desk

Solve real life problems involving measurements



Activity Whose length is greater?



Exercise 51

Tick (✓) the object greater than 1 m.

(1) Length of school bus.

(2) Length of a book.

(3) Height of your classroom.

(4) Height of a glass of water.

(5) Measure of your own height.

(6) Measure of your teacher's height.

(7) Length of a pencil.

MEASUREMENT OF MASS / WEIGHT

Recognize the standard units of mass/weight, i.e. kilogram, gram.

We have already learnt about heavier and lighter thing or objects in class I.

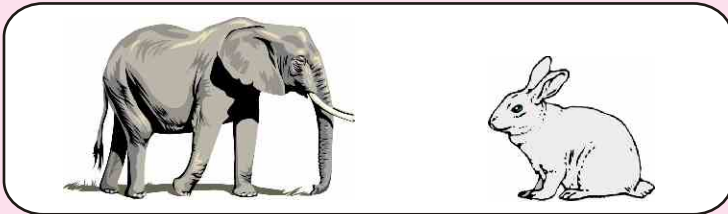


Activity 1 Tick (✓) the heavier and cross (✗) the lighter.

(1)



(2)



The basic standard unit of weight is gram. We write “g” for a gram. There are 1000 grams in one kilogram.

$$\begin{aligned} 1 \text{ kilogram} &= 1000 \text{ gram} \\ \text{or} \\ 1\text{kg} &= 1000 \text{ g} \end{aligned}$$

There are some machines which are used to weigh things.

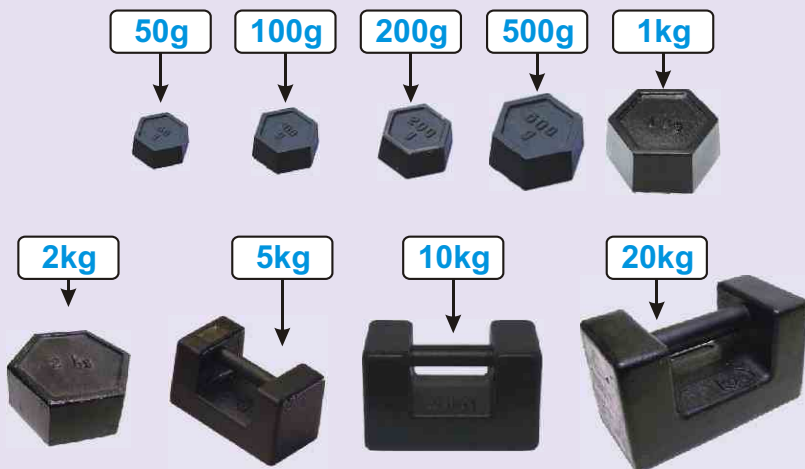


Teacher's Note

Teacher should explain the concept of measurement of mass through real life experience of students.





Read and write standard units of mass/weight including abbreviations

We use grams to measure light weight objects. Kilograms are used to weigh heavy objects. When we go for shopping, we see different weights in the shops.



Activity

Tick (✓) the correct unit of weight:

- (1) An  Weighs in ☒ **g** or ☐ **kg**
- (2) A  Weighs in ☐ **kg** or ☐ **g**
- (3) A  Weighs in ☐ **g** or ☐ **kg**
- (4) A  Weighs in ☐ **kg** or ☐ **g**

Solve real life problems involving mass/weight



Activity Arrange a physical balance and weights of 100 g, 200 g, 500 g, 1 kg and 2 kg. Also collect stones, books, copies and some other material things. Teacher should help the students to measure these things by using different weights.



Exercise 52

Write appropriate unit of weight of the following objects:

(1) A boy



Kg

(2) A goat

(3) A sugar bag



(4) A pencil



(5) A ring



(6) A chalk



(7) A hen



MEASUREMENT OF CAPACITY

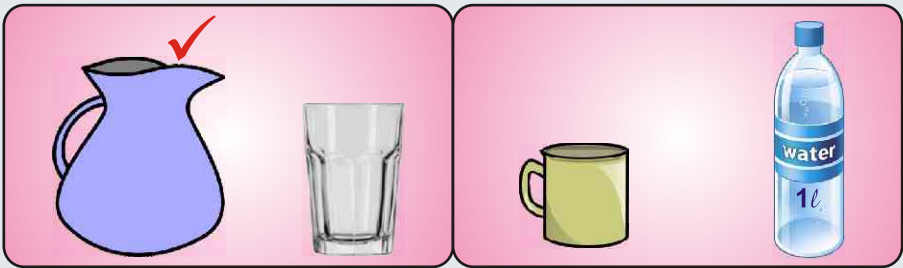
Compare capacity of different objects (jug, glass, cup etc.)

Take a glass and a bottle. Fill the glass with water and pour into the bottle. We will see that there is some space left in the bottle. It means the bottle can hold more water than the glass. In other words we can say that the capacity of the glass is less.



Activity

Tick (✓) the container that holds more quantity:



Exercise 53

Tick (✓) the object that holds more quantity and cross (✗) that holds less quantity.

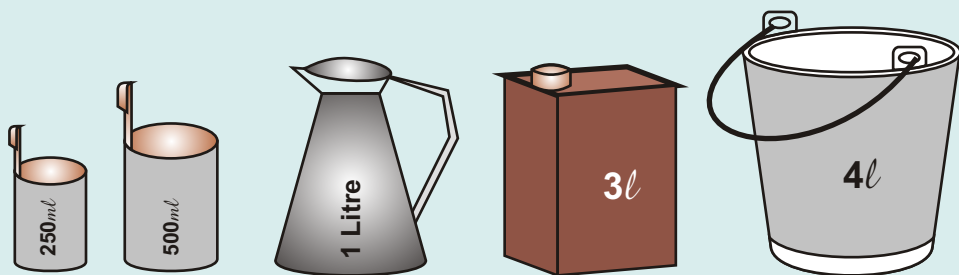


Recognize, read and write standard units of capacity including abbreviations

Litre is the basic standard unit to measure capacity of the quantity of liquid. We write “ *l* ” for a litre and “ *ml* ” for millilitre.

$$1\text{ l} = 1000\text{ ml}$$

Liquids such as milk, oil, juice, petrol, etc. are measured in litres. Here are some containers.



Solve real life problems involving capacity/volume

In real life we bought milk, juice, oil and petrol in different quantities.



Exercise 54

- (1) My mother filled 4 cups of milk from 1 litre.



How much milk will be required to fill 8 cups? _____

- (2) Sara pours 3 glasses of juice from a bottle of 1 litre.
How much bottles of juice are required for 6 glasses.

- (3) Ahmed pours 2 glasses of water from 1 litre jug?
How many glasses required to pours such two jugs?

- (4) Which is the better for filling the full capacity of bucket?



(1)



(2)



TIME

Know the number of hours in a day and number of minutes in an hour

Each day is divided into 24 equal, parts, each part is called an **hour**.



A clock tell us the time of the day. A day is divided into two equal halves of 12 hour clock. One half begins at midnight to noon (12 hours). The second half begins at 12 noon and ends at midnight (12 hours).

Analog clock

Long hand
Or
minute hand

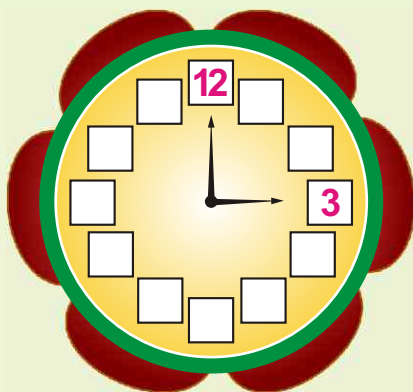


Short hand
Or
hour hand



Activity

Write the correct numbers in boxes of the clock. Also write the time shown in the clock.



___ O'clock

There are 24 hours in each day. The hours hand makes two complete rounds every day.

- There are 60 minutes in an hour.
- There are 24 hours in a day.
- There are 7 days in a week.
- There are 4 weeks in a month.

Read and write the time from a clock in hours and minutes (with five minute intervals) e.g., read 8:15 as eight fifteen and 8:50 as eight fifty.

Look at this clock.



The hour hand is pointing to 5. The minute hand is pointing to 12. At this position, the time is

5:00

or 5'O clock

A clock has two hands. The long hand is the minute hand. It takes five intervals to move between one number to the next number. It complete one round in 60 minutes or 1 hour.



The short hand is the hour hand. It makes a complete round the clock in every hour 12 to 1, 1 to 2, 2 to 3, 3 to 4 and back to 12. It makes a complete round the clock in every twelve hours.



We read and write the time as:



Six five

6:05



Four
Forty five

4:45

Exercise 55

Read and write the time in the given boxes.



Four five

4:05



Eleven twenty five

11:25



Three ten

:



Six fifteen

:



Eight thirty five

:



:



:



:

Teacher's Note

Teacher should bring a clock in the classroom and move its hands at different positions to show time.

1. Half past

The minute hand is at **6**.
 The minute hand has moved
 half a circle from **12** to **6**.
 The time is **half past three**
 or write as **3:30**



2. Quarter past

Here, the minute hand points to **3**.
 The hour hand has moved a little bit from
5 towards **6**. The minute hand has moved
 a quarter of a circle from **12** to **3**.
 We read, **it is quarter past 5** or write as **5:15**



3. Quarter to

Here the minute hand points to **9**.
 The hour hand is almost at **8**.
 The minute hand has moved three
 quarters from **12** towards **9**.
 We say that, **it is a quarter hour left to eight**.
 or write as **7:45**



equals



equals



equals



Exercise 56

Write time below each clock.



2'O clock

or **2:00**



___'O clock

or



Quarter past 3

or **3:15**



Quarter past ___

or



Half past 3

or **3:30**



Half past ___

or



Quarter to 4

or **3:45**

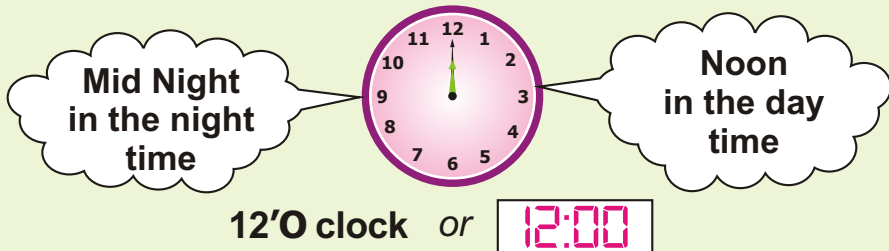


Quarter to ___

or

Recognize a.m. and p.m

There are 24 hours in a day. We can say:



12'O clock or **12:00**

Time of morning is written as a.m. It starts from midnight and ends at Noon (12 hours).



Time of afternoon is written as p.m. It starts from Noon and ends at midnight (12 hours).



Activity

Write a.m or p.m.

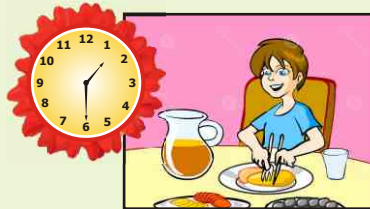
- Sunny takes his breakfast at 7:00 _____



- Bilal and Maria go to school at 7:45 _____



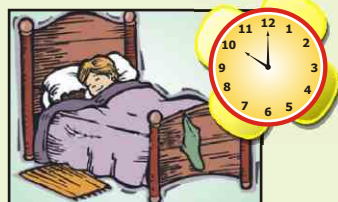
- Nasir takes his lunch at 1:30 _____



- Azam and Fouzia play at 5:15 _____



- Salman goes to bed at 10:00 _____



Draw hands of a clock to show time in hours and minutes (with five minute intervals)

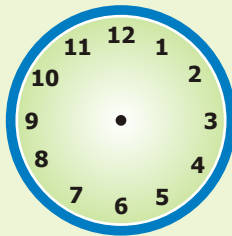
Exercise 57

Draw hands of clock to show the time in hours and minutes, also write.

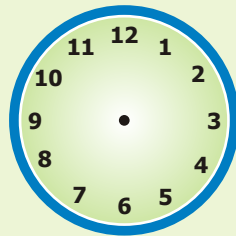


5:35

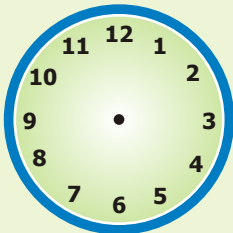
five thirty five



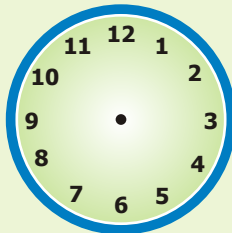
7:10



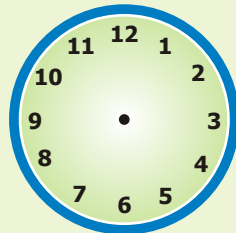
11:25



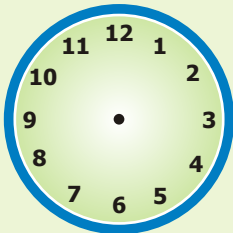
3:05



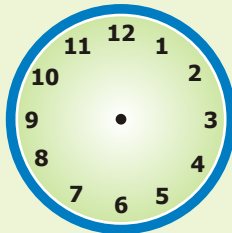
8:15



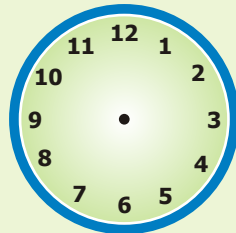
6:30



9:40



10:20



2:55

Teacher's Note

Teacher should help the students to use sticks of match box for showing time in each clock.

Use solar calendar to find a particular date

Calendar

There are two types of calendars used in Pakistan.

- (1) **Solar Calendar** (2) **Lunar Calendar**

Each of them has 12 months.



Activity

Put the months of solar calendar in order.

JULY
MARCH
JANUARY
FEBRUARY

DECEMBER
SEPTEMBER
MAY
OCTOBER

APRIL
NOVEMBER
AUGUST
JUNE

1st

January

2nd

3rd

4th

5th

6th

7th

8th

9th

10th

11th

12th

Model Solar Calendar

JANUARY							FEBRUARY							MARCH							APRIL						
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	*	1	2	3	4	5	*	*	*	*	*	1	2	31	*	*	*	*	1	2	*	1	2	3	4	5	6
6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9	7	8	9	10	11	12	13
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16	14	15	16	17	18	19	20
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27
27	28	29	30	31	*	*	24	25	26	27	28	*	*	24	25	26	27	28	29	30	28	29	30	*	*	*	*

MAY							JUNE							JULY							AUGUST						
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	*	*	1	2	3	4	30	*	*	*	*	*	1	*	1	2	3	4	5	6	*	*	*	*	1	2	3
5	6	7	8	9	10	11	2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
26	27	28	29	30	31	*	23	24	25	26	27	28	29	28	29	30	31	*	*	*	25	26	27	28	29	30	31

SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7	*	*	1	2	3	4	5	*	*	*	*	*	1	2	1	2	3	4	5	6	7
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
29	30	*	*	*	*	*	27	28	29	30	31	*	*	24	25	26	27	28	29	30	29	30	31	*	*	*	*

Exercise 58

Answer the following questions orally according to the above Solar Calendar:

- What is the day on your birthday? _____
- On which date will we celebrate Independence day? _____
- What date is on first Friday in the month of May? _____
- What day is March 23rd? _____
- What day of the week does December start on? _____

Use lunar calendar to find a particular date

- It is also called the Hijra calendar, as it is related to the event of the migration made by Prophet Muhammad (P.B.U.H) from Makkah to Madina.
- There are 29 or 30 days in a lunar month depending upon the appearance of new moon.
- Lunar month's date changes from sunset of one day before till sunset of next day.



Name of Months in Lunar Calendar



Answer the following questions orally:

1. Identify the first month of Islamic year.
2. In which month Muslims fast?
3. Which is the last month of Islamic year?
4. In which month Muslims celebrated Eid-ul-Azha?

Teacher's Note

Teacher should tell the students the name of the months of lunar calendar and help them to answers of given activity.

Model Lunar Calendar

MUHARRAM						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
30	*	*	*	*	*	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

SAFAR						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	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	*	*	*	*	*

RABI-UL-AWWAL						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	*	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	*	*	*

RABI-UL-SANI						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	*	*	*	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	*	*

JAMADI-UL-AWWAL						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
30	*	*	*	*	*	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

JAMADI-UL-SANI						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	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	*	*	*	*	*

RAJAB						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	*	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	*	*	*

SHABAN						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	*	*	*	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	*	*

RAMZAN						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
30	*	*	*	*	*	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

SHAWWAL						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	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	*	*	*	*	*

ZILQUAD						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	*	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	*	*	*

ZIL HAJJ						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
*	*	*	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	*	*	*

Exercise 59

Answer the following questions orally:

1. What day is Rajab 27th?
2. What is the day before 10th Muharram?
3. What is the day after 5th Zilquad?
4. On which date Muslims perform Hajj?
5. What is the date of Eid Melad-ul-Nabi (P.B.U.H)?
6. Which is the first month of Lunar Calendar?
7. Which month comes after Shaban?

TWO-DIMENSIONAL FIGURES

Identify the figures like square, rectangle, circle, semi-circle and quarter-circle

We have already learnt the basic geometrical shapes in class I.



Activity 1 Write the name of geometrical shape shown in each object.



Activity 2 Cut paper into circular shape.

Fold it into 2 equal parts.

We get two half circles. Each half circle is called a **semi-circle**.

When a circle is divided in four equal parts, we get four **quarter-circle**.

Circle

Semi-Circle

Semi-Circle

Quarter Circle

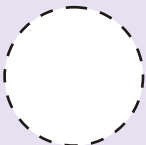
Quarter Circle

Quarter Circle

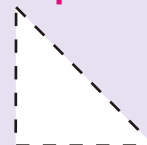
Quarter Circle

Exercise 60



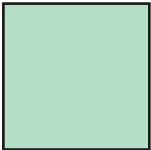
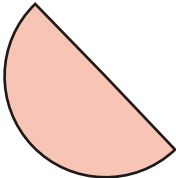
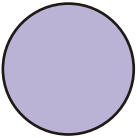
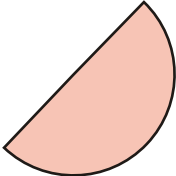
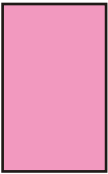
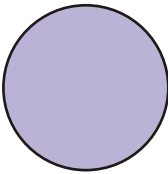

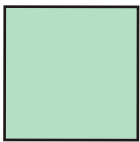
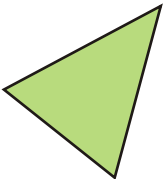

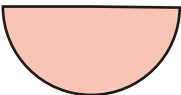
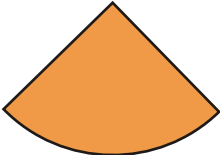

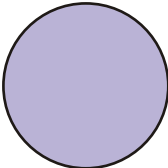

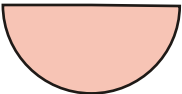
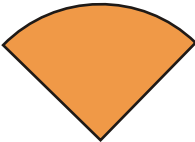
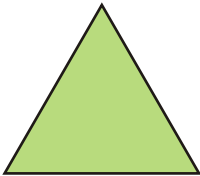
(1) Join dots and write the names of the shapes.



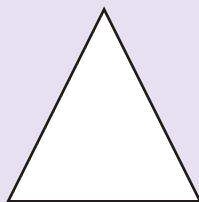
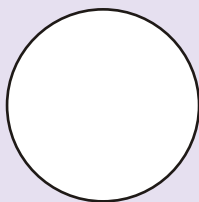
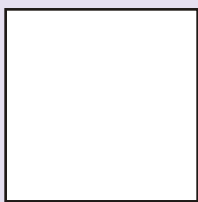
Circle



(2) Tick and name the figure on the right that looks like the figure on the left.

 <u>RECTANGLE</u>			
 <u> </u>			
 <u> </u>			
 <u> </u>			
 <u> </u>			

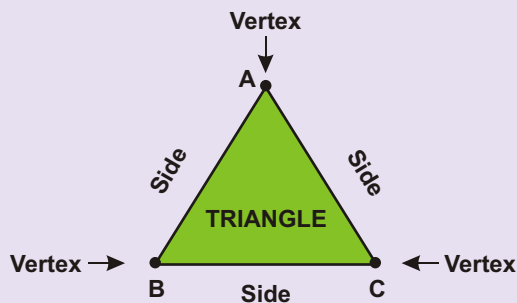
(3) By putting small shapes inside the large shape, how many figures can be made?



Identify vertices and sides of a triangle, rectangle and square

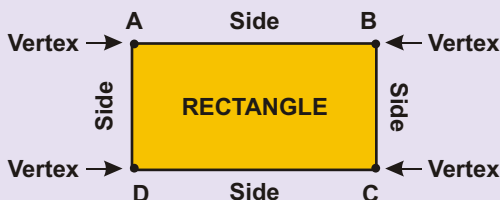
TRIANGLE

Triangle has **three sides** and **three vertices**.



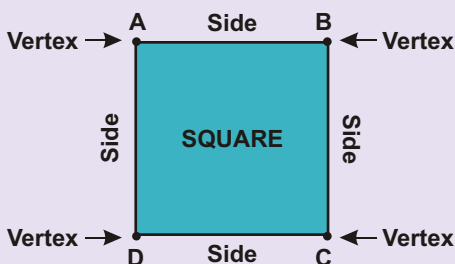
RECTANGLE

Rectangle has **four sides** and **four vertices**.



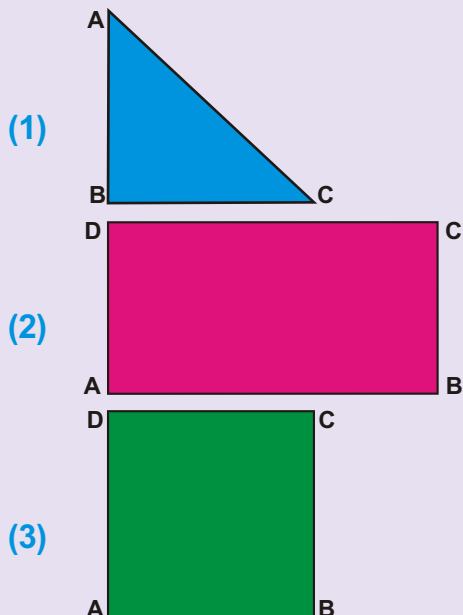
SQUARE

Square has **four sides** and **four vertices**.



Exercise 61

Write number of sides and vertices.



It is a **Triangle**.

It has sides and vertices.

It is a .

It has sides and vertices.

It is a .

It has sides and vertices.

LINES AND CURVES

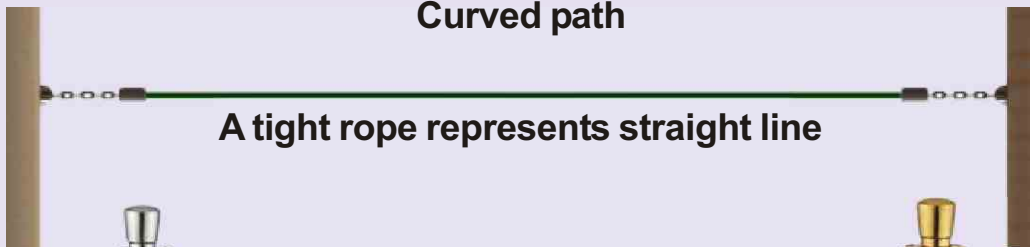
Differentiate between a straight line and a curved line



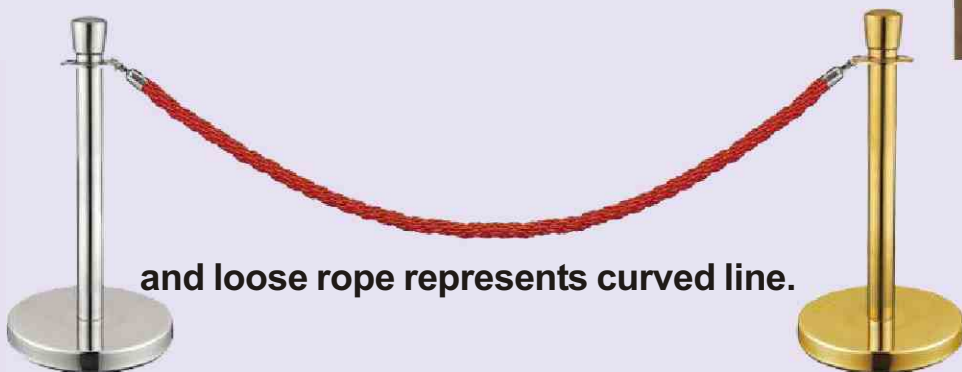
Straight path



Curved path



A tight rope represents straight line



and loose rope represents curved line.



This is a straight line.



This is a curved line.

Teacher's Note

Teacher should explain straight and curved lines and also use other materials for providing exercise.

Exercise 62

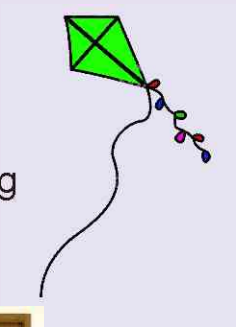
Tick (✓) the shapes representing straight line and cross (✗) the shapes of curved line.

(1) Movement of snake



☒

(2) Loose position of string



☐

(3) Edge of a door



☐

(4) Edge of a blackboard



☐

(5) Railway line



☐

(6) Coil



☐

Identification of straight and curved lines:



Activity 1 Tick the correct shape of given line drawings.

(1)



- ☒ Straight Line
☐ Curved Line

(2)



- ☐ Straight Line
☒ Curved Line

(3)



- ☐ Straight Line
☐ Curved Line

(4)



- ☐ Straight Line
☐ Curved Line

(5)



- ☐ Straight Line
☐ Curved Line

(6)

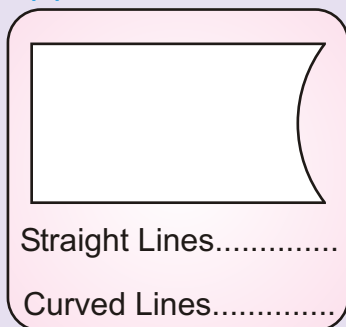


- ☐ Straight Line
☐ Curved Line

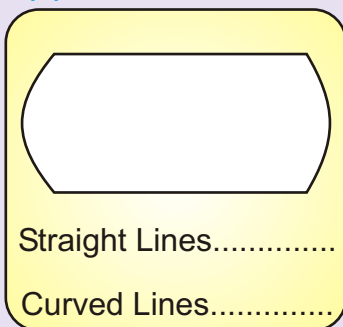
Exercise 63

Write how many straight and curved lines are given in the following figures.

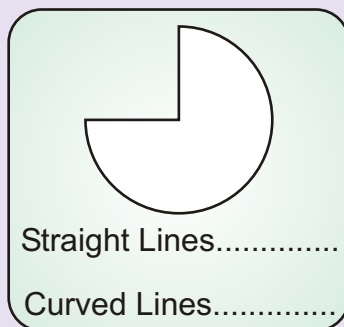
(1)



(2)



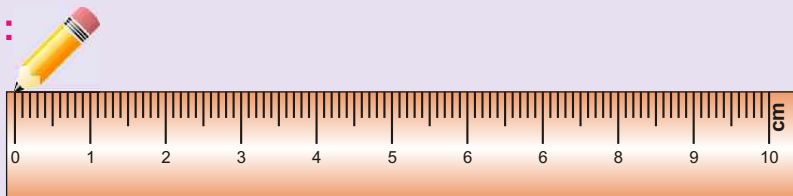
(3)



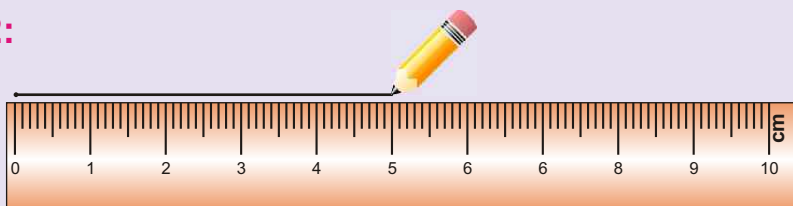
Use straightedge/ruler to draw a straight line of given length (exclude fractional lengths)

Aamir draws a straight line of 5 cm by using a ruler.

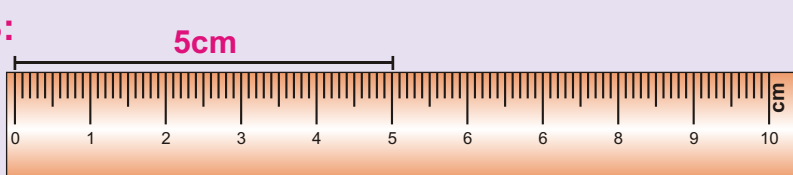
Step 1:



Step 2:



Step 3:



Exercise 64

(1) Draw straight lines of following lengths with the help of ruler.

(1) 4 cm (2) 6 cm (3) 2 cm

(4) 3 cm (5) 9 cm (6) 7 cm

(2) Hina is drawing a straight line of 8 cm. Shafia is drawing another line of 9 cm. Show it practically whose line is smaller in length?