

Mathematics



Based on National Curriculum 2022-23





National Book Foundation

بشواللوالر تحلن الرويم

Model Textbook of

Mathematics Grade 1

Based on National Curriculum 2022-23





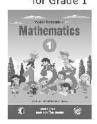
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Model Textbook of **Mathematics** for Grade 1



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Preface

This Model Textbook for Mathematics grade 1 has been developed by NBF according to the National Curriculum of Pakistan 2022. The aim of this textbook is to enhance learning abilities through inculcation of logical thinking in learners. The main objective of this book is to develop higher order thinking processes by systematically building upon the foundation of learning from the previous grades. A key emphasis of the present textbook is on creating real life linkages of the concepts and methods introduced. This approach was devised with the intent of enabling students to solve daily life problems as they go up the learning curve and for them to fully grasp the conceptual basis that will be built upon in subsequent grades.

An amalgamation of the efforts of experts and experienced authors, this book was reviewed and finalized after extensive reviews by professional educationists. Efforts were made to make the contents student friendly and to develop the concepts in interesting ways.

The National Book Foundation is always striving for improvement in the quality of its books. The present book features an improved design, better illustration and interesting activities relating to real life to make it attractive for young learners. However, there is always room for improvement and the suggestions and feedback of students, teachers and the community are most welcome for further enriching the subsequent editions of this book.

May Allah guide and help us (Ameen).

Dr. Raja Mazhar Hameed Managing Director





Whole Numbers

By the end of this unit, you will be able to:

- read and write numbers up to 9 in numerals and in words.
- count objects up to 9 and represent in numbers.
- · identify 0 as a number.
- match numbers 0-9 with objects.
- identify 10 as a 2 digit number.
- compare and order the numbers 0 -10.
- read and write numbers up to 99.
- count forward and backward up to 99.
- recognize the place value of a specific digit in a 2 digit number (tens and ones).
- decompose a number up to 99 to identify the value of a number in ten's and one's place.
- order the set of numbers from 0 to 99 in ascending and descending order.
- identify which number (up to 99) comes:
 - · before and after a given number.
 - · between two given numbers.
- identify and write missing numbers in a sequence from 1 to 100.
- count and write number of objects in a given set.
- identify the position of objects using ordinal numbers such as first, second, ..., tenth, including representations of 1st, 2nd, ...,10th through pictures.
- compare two or more group of objects in terms of numbers.
- match objects having one to one correspondence.
- identify the number of objects in two groups to show "more than" and "less than".

Can you read these numbers? The state of th





Counting 1 to 9



I have a lot of toys.

Can you help me to count them?



Let's count and read.



1





2







3







4















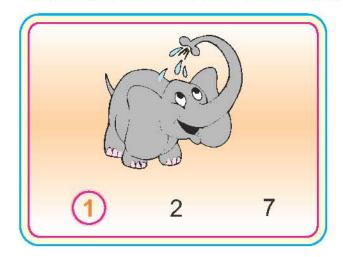


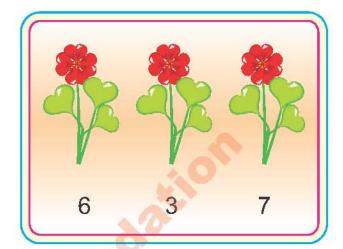
Ask students to work in groups. Give each group 0 to 9 number cards. Show different number of objects. Ask each group to show the correct number card one by one. Repeat this activity several times with different numbers and objects.

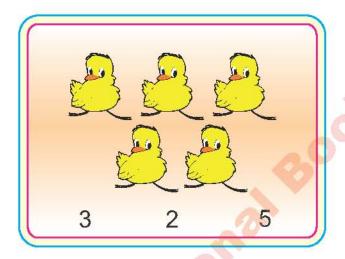


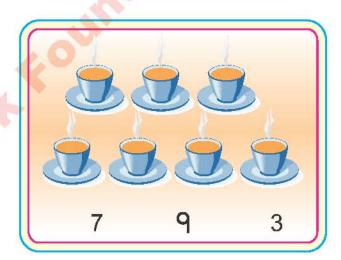


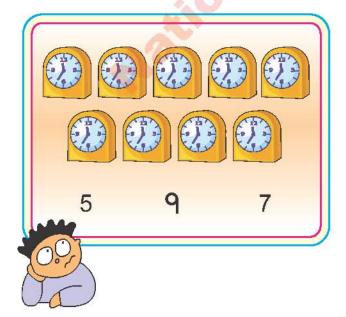
1. Count and circle the correct number.

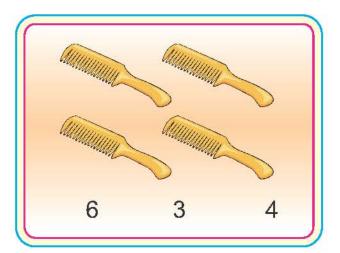










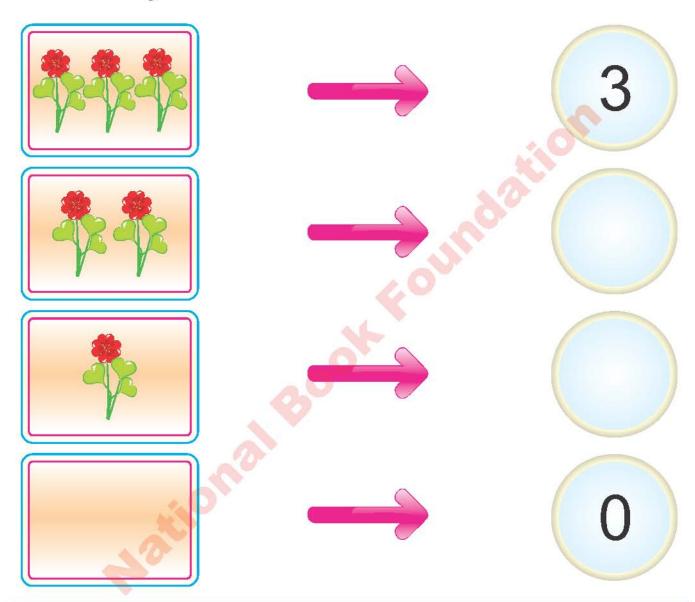






THE CONCEPT OF ZERO

2. How many flowers in the box?





There is no flower in the box.

We say that there are zero flowers in the box. Zero is also a number. We write zero as "0".



Place 5 baskets and 4 balls on the table. Then put a ball in each basket. Ask students how many baskets have balls and how many baskets are empty. Let them know that 4 baskets have balls and 1 is empty. The empty basket shows that there is no ball in it, it means there are zero "0" balls.





3. Read and write the numbers from 0 - 9.

€ O)	0	0	0	0	0	0
1					Is	
2	2	2	2	2 &	2	2
今 十 2 3 4 5 6 7	3	3	3	311	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5 6
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
8 9	9	9	9	9	9	9





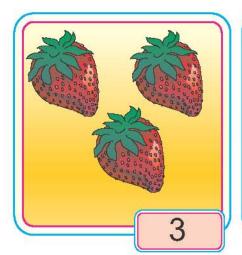
4. Read and write the numbers from 9 - 0.

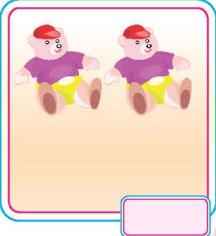
9	9	9	9	9	9	9
8	8	8		8	8	8
7	7	7	7	7	70	7
6	6	6	6	6	6	6
9 8 7 6 5 4 3 2 2	5 4	5	5	5	5	5 4
4	4	40	4	4	4	4
3	3	3	3	3	3	3
2	2	2	2	2	2	2
1						
(O)	0	0	0	0	0	0

THE PART OF THE PA

Place number cards (0 to 9) randomly on the table. Call a student and ask him/her to put the number cards in order on the table. Then ask him/her to count forward (0 to 9) and count backward (9 to 0).

5. Count objects and write the number.













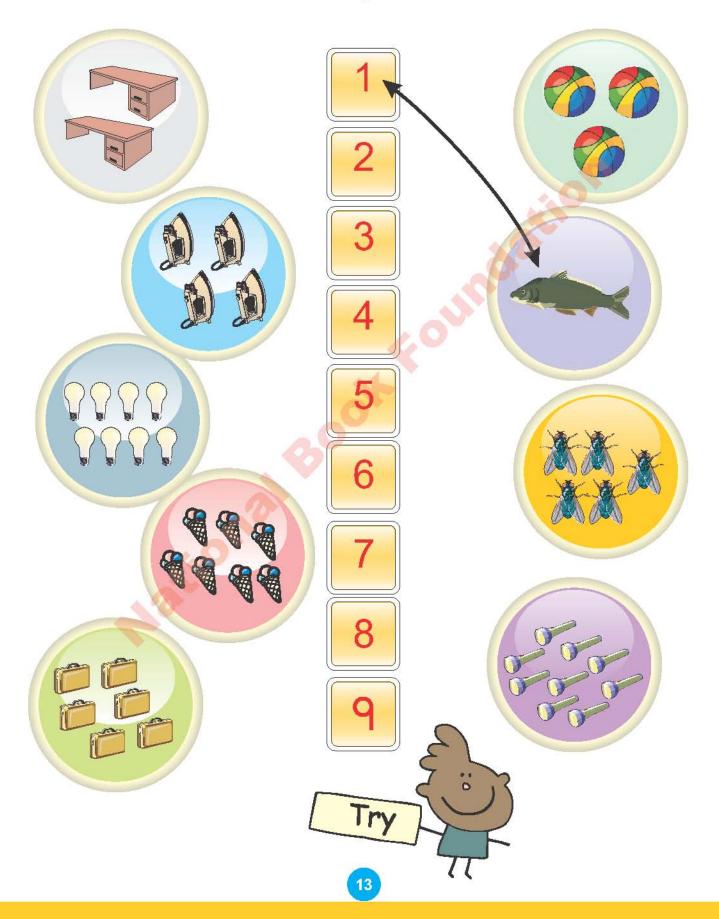








6. Match the numbers with objects.





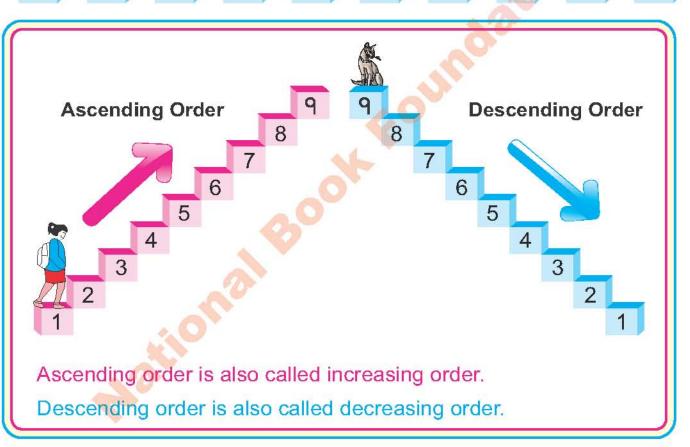
ASCENDING AND DESCENDING ORDER

Ascending Order

0 1 2 3 3 4 5 5 6 7 8 9 9

Descending Order

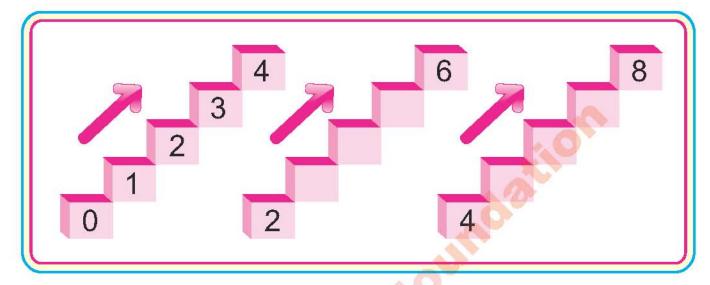
9 🖶 8 🖶 7 🖶 6 🖶 5 🖶 4 🖶 3 🖶 2 🖶 1 🖶 0

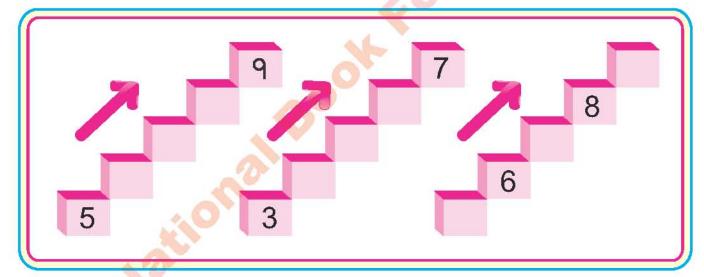




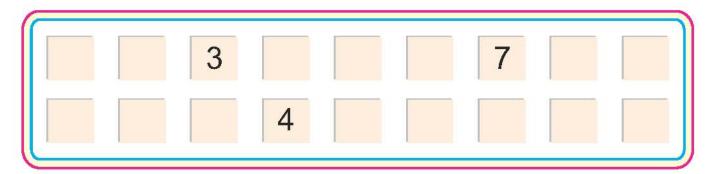


1. Write the missing numbers.





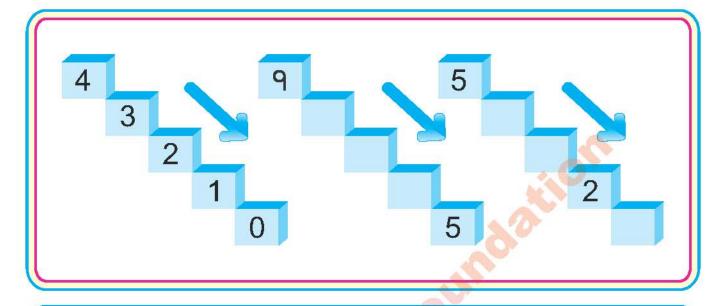
2. Write 1-9 in ascending orders.

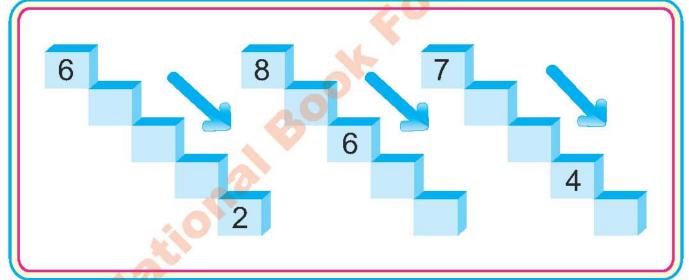






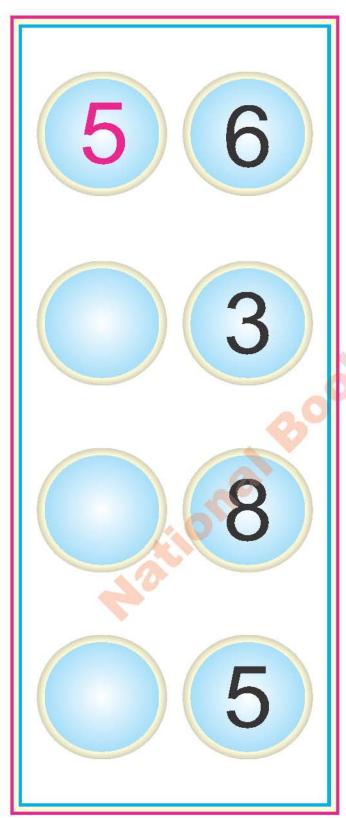
3. Write the missing numbers.

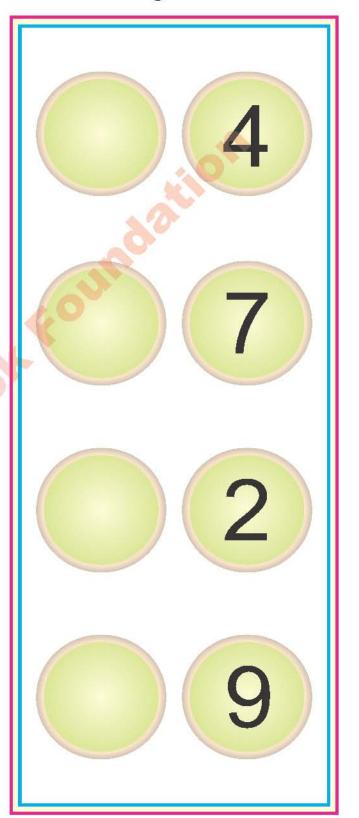




4. Write 9-1 in descending order.

5. Write the number that comes before the given number.





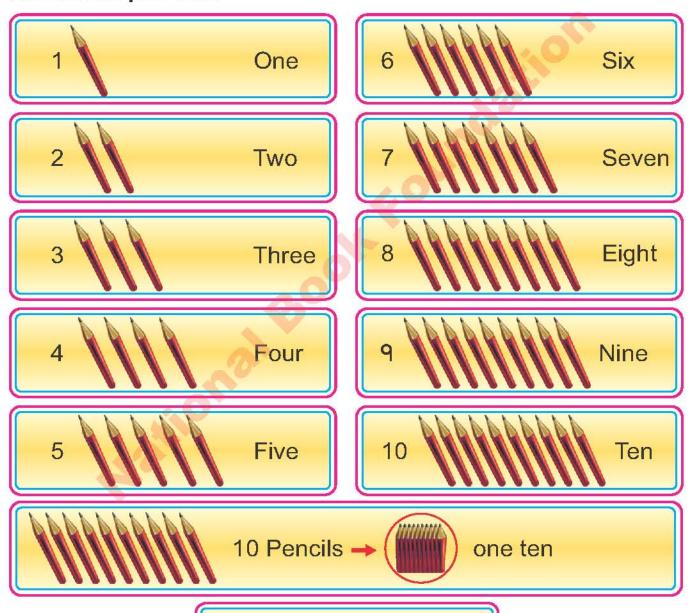




Concept of 10

You know numbers from 0-9. What number comes after 9? Add 1 to 9 and you will get 10. We write it as 10. 10 is 2 digit number.

Count the pencils:



"10" is a two digit number.



Show students a large-sized flash card with the number 10 written on it. Paste a number chart from 0 to 10 on the board and ask students to find the number 10 on it.





Counting from 10 - 20

Pencils	Tens	Ones	In Numbers	In Words
	1	0	10	Ten
	1	1	11	Eleven
	1	2	12	Twelve
	1	3	13	Thirteen
	1	4	14	Fourteen
	91	5	15	Fifteen
	1	6	16	Sixteen
	1	7	17	Seventeen
	1	8	18	Eighteen
	1	9	19	Nineteen
	2	0	20	Twenty





Counting from 21 - 30

Pencils	Tens	Ones	In Numbers	In Words
	2	1	21	Twenty one
	2	2	22	Twenty two
	2	3	23	Twenty three
	2	4	24	Twenty four
time	2	5	25	Twenty five
	2	6	26	Twenty six
titititi	2	7	27	Twenty seven
	2	8	28	Twenty eight
titititi	2	9	29	Twenty nine
	3	0	30	Thirty





Counting from 31 - 40

Pencils	Tens	Ones	In Numbers	In Words
	3	1	31	Thirty one
	3	2	32	Thirty two
	3	3	33	Thirty three
	3	4	34	Thirty four
	3	5	35	Thirty five
	3	6	36	Thirty six
	3	7	37	Thirty seven
	3	8	38	Thirty eight
	3	9	39	Thirty nine
	4	0	40	Forty





Counting from 41 - 50

Pencils	Tens	Ones	In Numbers	In Words
	4	1	41	Forty one
	4	2	42	Forty two
	4	3	43	Forty three
	4	4	44	Forty four
	4	5	45	Forty five
	4	6	46	Forty six
	4	7	47	Forty seven
	4	8	48	Forty eight
THE THE THE STREET	4	9	49	Forty nine
	5	0	50	Fifty





Counting from 51 - 60

Pencils	Tens	Ones	In Numbers	In Words
	5	1	51	Fifty one
	5	2	52	Fifty two
	5	3	53	Fifty three
	5	4	54	Fifty four
	5	5	55	Fifty five
	5	6	56	Fifty six
	5	7	57	Fifty seven
	5	8	58	Fifty eight
	5	9	59	Fifty nine
	6	0	60	Sixty





Counting from 61 - 70

Pencils	Tens	Ones	In Numbers	In Words
	6	1	61	Sixty one
	6	2	62	Sixty two
	6	3	63	Sixty three
	6	4	64	Sixty four
	6	5	65	Sixty five
	6	6	66	Sixty six
	6	7	67	Sixty seven
	6	8	68	Sixty eight
	6	9	69	Sixty nine
	7	0	70	Seventy





Counting from 71 - 80

Pencils	Tens	Ones	In Numbers	In Words
	7	1	71	Seventy one
	7	2	72	Seventy two
	7	3	73	Seventy three
	7	4	74	Seventy four
	7	5	75	Seventy five
	7	6	76	Seventy six
	7	7	77	Seventy seven
	7	8	78	Seventy eight
	7	9	79	Seventy nine
	8	0	80	Eighty





Counting from 81 - 90

Pencils	Tens	Ones	In Numbers	In Words
	8	1	81	Eighty one
	8	2	82	Eighty two
	8	3	83	Eighty three
	8	4	84	Eighty four
	8	5	85	Eighty five
	8	6	86	Eighty six
	8	7	87	Eighty seven
	8	8	88	Eighty eight
	8	9	89	Eighty nine
	9	0	90	Ninety





Counting from 91 - 99

Pencils	Tens	Ones	In Numbers	In Words
	9	1	91	Ninety one
	9	2	92	Ninety two
	9	3	93	Ninety three
	9	4	94	Ninety four
	9	5	95	Ninety five
	9	6	96	Ninety six
	9	7	97	Ninety seven
	9	8	98	Ninety eight
	9	9	99	Ninety nine





1. Fill in the blanks.

12	twelve	1	ten	and	2	ones
34	thirty four	3	tens	and	4	ones
10	ten	1	ten	and	0	ones
14	fourteen	1	ten	and	4	ones
19	nineteen		ten	and		ones
22	twenty two		tens	and		ones
27	twenty seven		tens	and	***************************************	ones
31	thirty one		tens	and	***************************************	one
32	thirty two		tens	and		ones
43	forty three	***************************************	tens	and	******************************	ones
59	fifty nine		tens	and		ones
73	seventy three		tens	and		ones
88	eighty eight		tens	and		ones
92	ninety two	***************************************	tens	and	***************************************	ones





2. Count in tens and ones. Write the number.



2 tens 5 ones

25







tens ones





tens ___ ones





___ ten ___ ones





tens ones





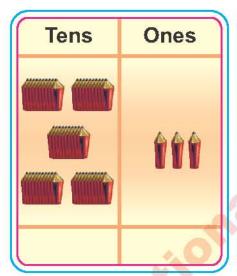
Place 25 beads and 2 glasses on the table. Ask students to make groups of tens using a glass. There are 2 glasses of tens and 5 beads separately. Explain to the students that 2 tens represent number 20 and each separate bead represents one. So, 2 tens and 5 ones make 25. Repeat this activity for different numbers.

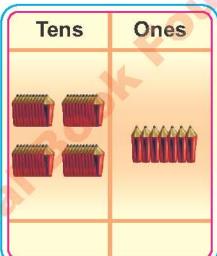
3. Write the number in the place value.

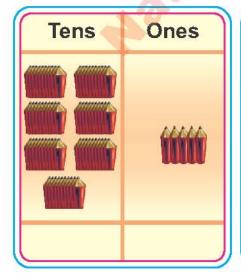
Tens	Ones
	î
2	4

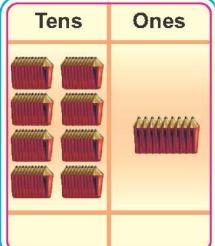
Tens	Ones

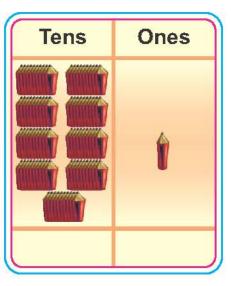
Tens	Ones
200	











4. Numbers in increasing order.

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

5. Numbers in decreasing order.

99	98	97	96	95	94	93	92	91	90
89	88	87	86	85	84	83	82	81	80
79	78	77	76	75	74	73	72	71	70
69	68	67	66	65	64	63	62	61	60
59	58	57	56	55	54	53	52	51	50
49	48	47	46	45	44	43	42	41	40
39	38	37	36	35	34	33	32	31	30
29	28	27	26	25	24	23	22	21	20
19	18	17	16	15	14	13	12	11	10
9	8	7	6	5	4	3	2	1	0

The Man

6. Write the missing numbers.

0	1		3			6			9
		12					17	10	
	21					26	N. C.		
					35				39
40				44	7				
			53	0					
		62					67		
	71								
80									
							97		99

MAN MAN



7. Write the missing numbers.

99			96		94				90
	88			85				20	
							O		
				65	4	JUIN			
		57		CO	54				
			46	0		43			
		ijo					32		
	1							21	
		17					12		
9			6			3		1	0

MA

8. Arrange numbers in increasing order.

8	7	6	4	5	->	4	5	6	7	8
3	8	11	1	15	->	1	3	8	11	15
11	17	19	21	31	->		8			
17	18	20	14	15	->	√ 0				
18	11	28	20	17	3					
24	21	25	33	36	->					
49	78	41	54	87	->					
74	62	65	51	55	->					
96	99	88	90	78	->					
30	51	35	55	72	->					

MA MA

9. Arrange numbers in decreasing order.

8	7	6	4	5	->	8	7	6	5	4
4	9	6	3	1	->	9	6	4	3	1
11	16	6	5	4	->		0			
7	5	9	13	12	->	0	710			
8	5	6	10	13						
15	9	3	10	11	→					
30	28	5	4	3	->					
3	7	50	19	51	->					
30	13	17	70	24	->					
30	13	17	70	24	->					



10. Fill in the blanks.

Before

<u>1</u>,2

Between

After



Place some number cards upside down on the table. Call a random student to the front of the class and ask him/her to pick up any number card. Then ask which number comes before and after this number.



The state of the s

11. Counting in Tens.

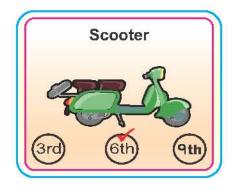
Pencils	Tens	Ones	In Numbers	In Words
	1	0	10	Ten
	2	0	20	Twenty
	3	0	30	Thirty
	4	0	40	Forty
	5	0	50	Fifty
	6	0	60	Sixty
	7	0	70	Seventy
	8	0	80	Eighty
	9	0	90	Ninety
	10 T	ens ma	ake one Hur	ndred or 100.

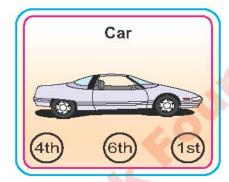


12. Ordinal Numbers



Tick (✓) the position of the object.

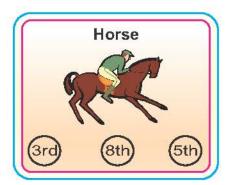




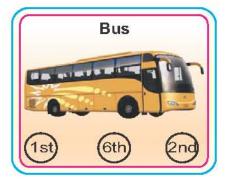


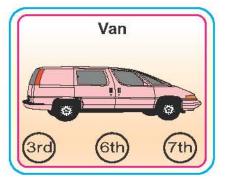








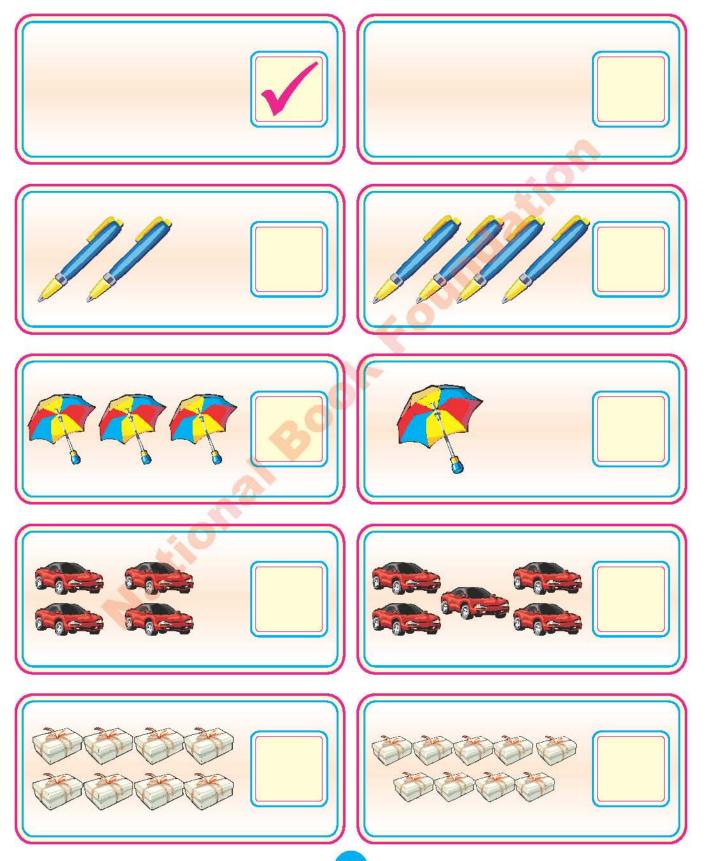






Place ten toys (with ordinal number tags) on the table. Ask students to arrange the toys on the table from right to left.

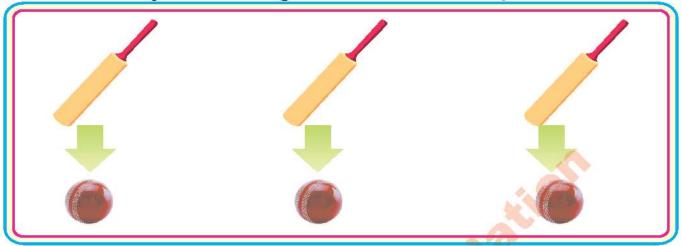
13. Count the objects and tick (✓) the more objects.

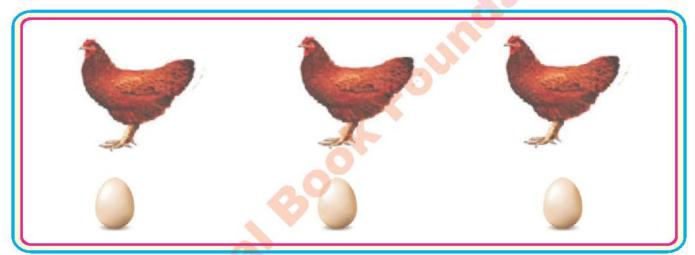






14. Match objects having one to one correspondence.









Give students different groups of objects. Ask them to match these objects in one-to-one correspondence and tell which group has more objects and which one has less?

15.Tick (**✓**) the more objects and cross (**X**) the less objects.





Number Operations



By the end of this unit, you will be able to:

- Compare numbers upto 20 to identify 'How much more / less, one from the other.
- Recognize and use symbols of addition '+', subtraction '-' and equality '='.
- · Addition of one digit numbers and two digit numbers upto 99.
- Subtraction of one digit number without borrowing from other number.
- Add and subtract the numbers using real life examples.
- Construct addition equation and subtraction equation from given pictures.
- Count and write in 2s, 5s and 10s using concrete objects.
- Recognize counting in 2s, 5s and 10s as multiplication tables.
- Multiplication of 2 digit numbers using only multiplication tables of 2s, 5s and 10s.
- Recognize division.
- Solve real life problems of multiplication and division.



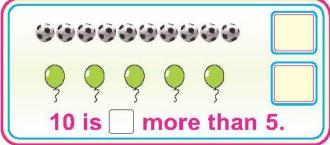
How much more than the other.



1. Fill in the boxes.



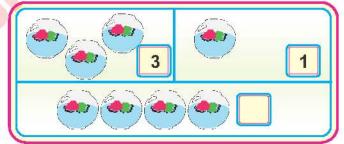


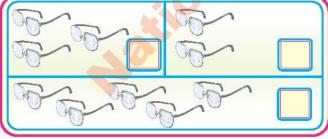


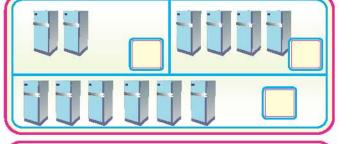


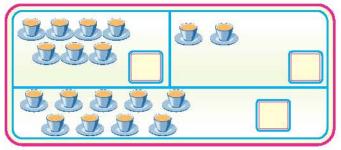
2. Addition means to put things together.

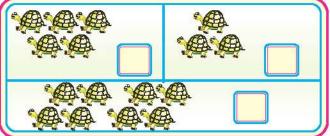




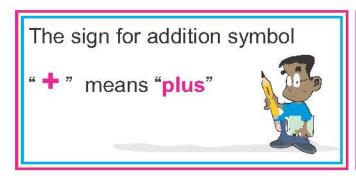


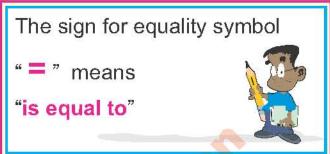




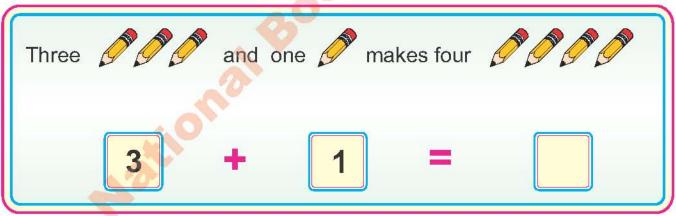


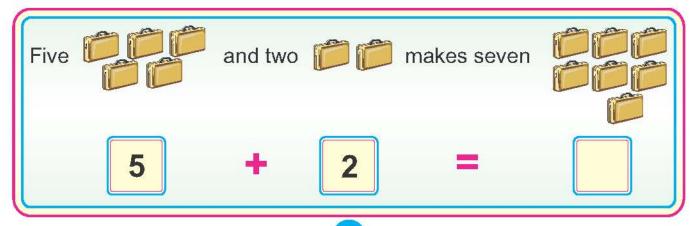
3. Addition and Equality Symbols + and =







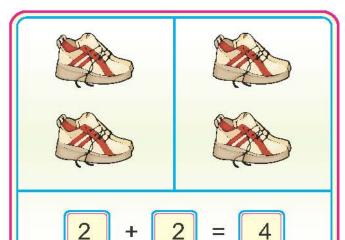


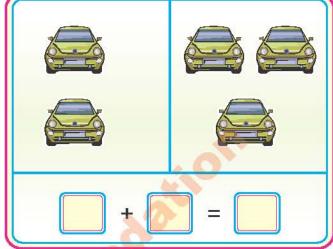


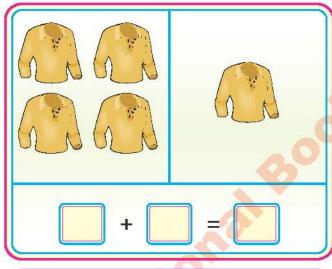


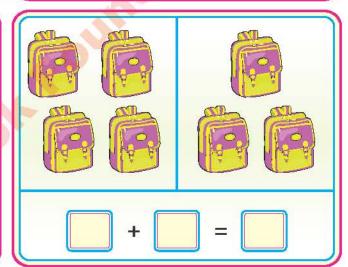


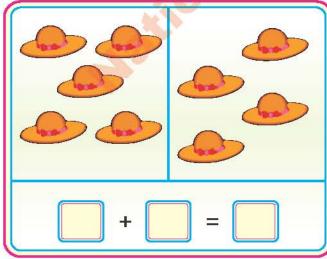
4. Add.

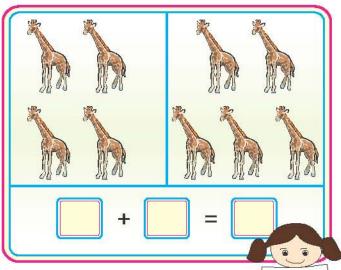










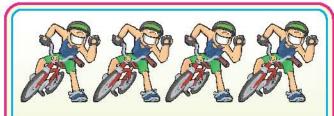


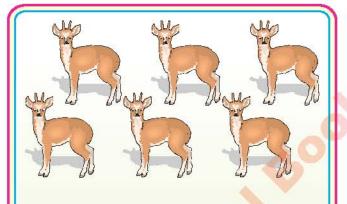


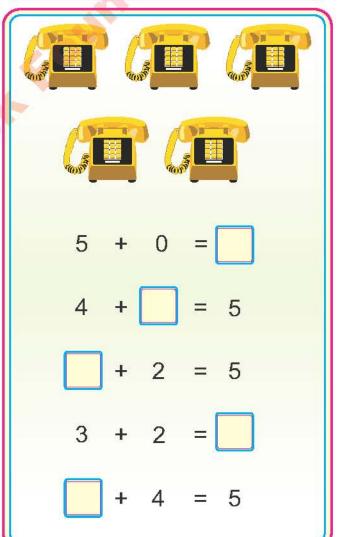


5. Add.











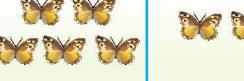


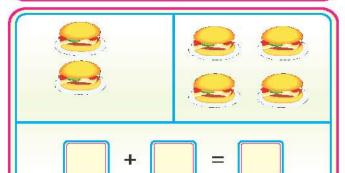
6. Count, write and add.

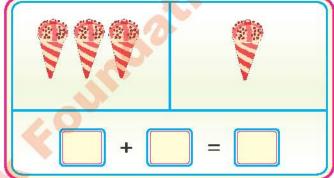




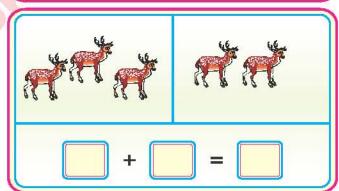


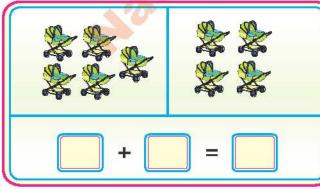


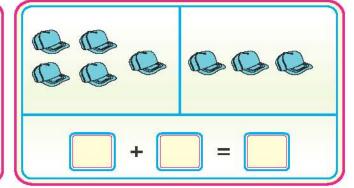














Ask students to add 1-digit numbers using number cards and symbols (+, =).



7. Solve.

2" +6""" 8 5 + 2

5 + 3

4 + 3

6 + 2

6 + 1

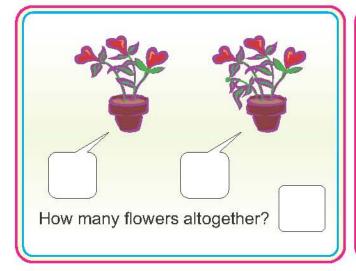
4 + 4 2 + 5 4 + 2

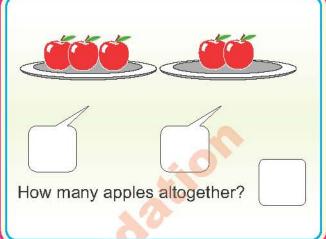
3 +1 7 + 2 5 + 4

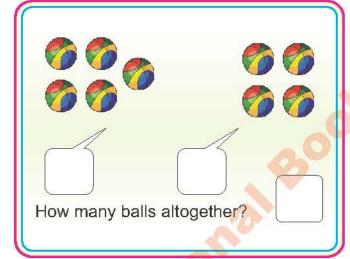
4 + 1 3 + 2 5 + 0

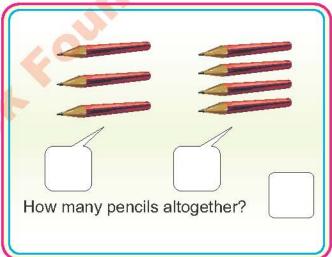


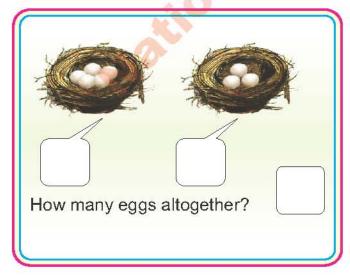
8. How many altogether?

















ADDITION OF TWO DIGIT NUMBERS

For addition of two digit numbers, ones are added in ones and tens are added in tens.

	Tens	Ones	
	1	4	1111
+		5	11111
	1	9	
		-05	

Ones	S	
6	11111	
2		
8	0000000	
	6 2	2

MA MA

1. Add.

Tens	Ones
1	2
+	4

Tens	Ones
1	5
+	3

Tens	Ones
1	1
†O	7
000	

Tens	Ones
1	4
+	5

nes	Tens
7	1 4
2	*0°
4	\$0

Tens	Ones
1	3
+	2

Tens	Ones
1	5
+	4

Tens	Ones
1	6
+	1

Tens	Ones
1	7
#	2



Draw a place value chart on the board and write different 1-digit numbers on it. Now ask students to add these numbers.

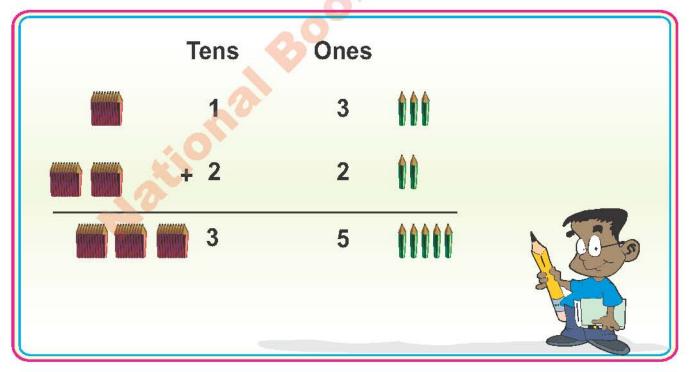
52





ADDITION OF TWO DIGIT NUMBERS

9	Tens	Ones		
	1	4	1111	
	+ 1	0		atile and the same of the same
	2	4	1111	
			0	





Draw a place value chart on the board and write different tens and 2-digit numbes on it. Now ask students to add these numbers.

The state of the s

1. Add.

Tens	Ones
2	7
+ 5	0

Tens	Ones
3	4
+ 2	0

Tens	Ones
1	0
+1	0
Old	

Tens	Ones
4	9
+ 3	0

Tens	Ones
6	9
+2	0

Tens	Ones
7	8
+ 1	0

Tens	Ones
3	5
+ 3	0

Tens	Ones
5	6
+ 4	0

Tens	Ones
2	7
+ 1	0

A STATE OF THE STA

2. Add.

T	ens	Ones
	2	0
+	1	5

Tens	Ones
5	3
+ 4	2
30	0

Tens 7	Ones 6
+ 2	1

Tens	Ones
4	6
+ 2	2

Tens	Ones
8	6
+ 1	3





3. Complete the following.

+ 5 = 6 - 1 + 5 = 6

How many more will make 6?

One more will make six

5 + = 9

7 = 10

+ 12 = 15

14 + () = 16

13 + () = 18

15 + () = 20

+ 7 = 9

+ 11 = 15

4. Add.

There are 5 girls and 7 boys in a class room.

How many students are altogether?

Girls = 5

Boys + = 7

Total Students = 12

Majeed has 10 sweets. His sister Khola has 15 sweets. How many sweets are altogether? Majeed's sweets = 10

Khola's sweets + = 15

Total Sweets =

I have 16 green pencils. My father gave me 23 blue pencils. How many pencils are altogether?

Green Pencils =

Blue Pencils + =

Total Pencils =

Ali has 10 books. He bought 9 more. How many books are altogether?

Ali's Books =

Bought + =

Total Books =

There are 23 apples and 35 bananas in a basket. How many fruits are altogether?

Apples =

Bananas + =

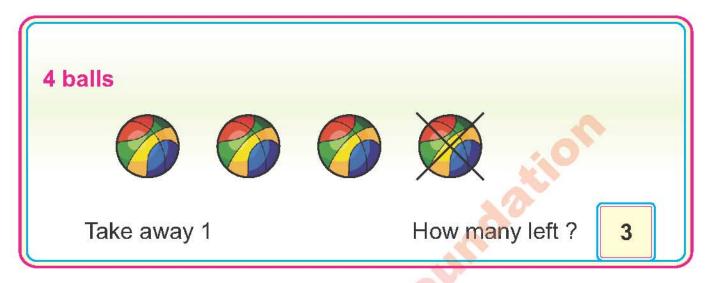
Total =

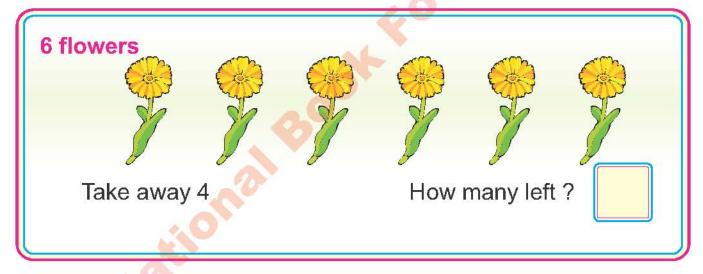


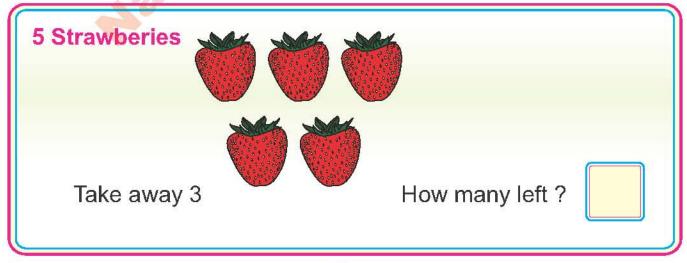


SUBTRACTION

Subtraction means to take away from a collection.









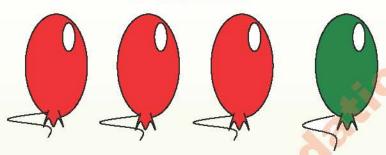


When we take away, we subtract.

Subtraction symbol is "-"

The symbol " - " means 'to subtract'. It is also called minus.

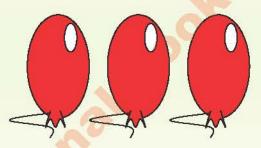
Balloons



Burst



Balloons left



So, we can write

$$4 - 1 = 3$$

Four minus one is equal to three.

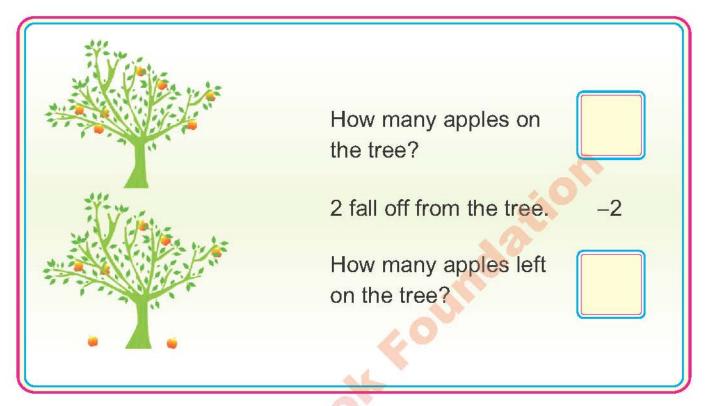
Three is also called the difference of four and one.







1. Subtract.



The same of the same of		
	How many birds?	
	3 fly away.	-3
	How many left?	







2. How many left?



If we hide 2





If we hide 3

$$4 - 3 =$$





If we hide 4

$$6 - 4 =$$





If we hide 2





If we hide 3

$$6 - 3 =$$



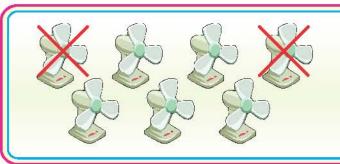


Ask students to subtract 1-digit numbers using number and symbol cards.





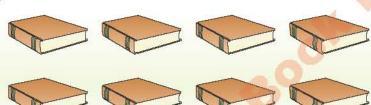
3. How many left?



Cross out 2



Cross out 3

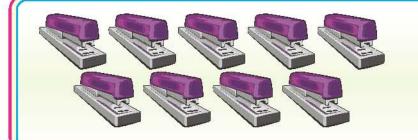


Cross out 6





Cross out 4



Cross out 7



4. Subtract.

8 111+++++

 $\frac{-5}{3}$

7

7 -4

7 -6

3 - 2

5 -1 5 -2 8 -5

9 -8

9 -6 9 -4

8 -7 8 -6

5 -4

7 -1 8 <u>- 1</u> 6 -6

9 -7 9 - 2

5 -0 5 -3 7 -2 8 - 8 7 -4

6 -5 6 -4

4 - 3

7 -3

9 -5



Draw a place value chart on the board and write different 1-digit and 2-digit numbers on it. Now ask students to find the difference between them.





For subtraction, we subtract ones from ones and tens from tens.

15 → 1 ten and 5 ones

 $3 \rightarrow 0$ tens and 3 ones

Now subtract ones from ones and tens from tens.

Tens 1	Ones 5	11111
·—	3	40
_1	2	11
15	3 =	12



26 - 2 tens and 6 ones

10 → 1 ten and 0 ones

Subtract ones from ones and tens from tens.

	Tens 2	Ones 6	00000
8	_ 1	0	
	1	6	PROPER



1. Subtract.

Tens	Ones
4	5
- 2	0

es	Tens
	3
	- 1

Tens	Ones
7	7
=	4
4.0	6

Tens	Ones
6	9
-	6

Tens	Ones
8	8
- 4	7.00
. 4	10

Tens	Ones
9	0
- 9	0

Tens	Ones
6	4
- 3	2

2
1

Tens	Ones
4	6
- 1	1



2. Solve.

Tens	Ones
5	6
_ 4	2

Tens	Ones
2	8
- 1	0

Tens	Ones
6	9
_ 4	8

Tens	Ones
7	2
_ 4	1

Tens	Ones
4	8
_ 3	5

Tens	Ones
6	8
_ 3	2

Tens	Ones
4	8
_ 2	3

Tens	Ones
3	7
_1	5

Tens	Ones
7	2
_ 3	0

Tens	Ones
6	4
_ 1	2

Tens	Ones
4	4
_1	1

Tens	Ones
3	6
_ 2	4

6
3



Draw a place value chart on the board and write different tens and 2-digit numbers on it. Now ask students to subtract these numbers.





3. Complete the missing number.

7 - 2 = 5





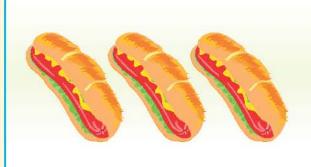


How many apples?

2 fall off

How many left?

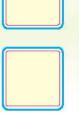




How many burgers?

Hina eats 1

How many left?

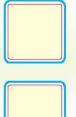


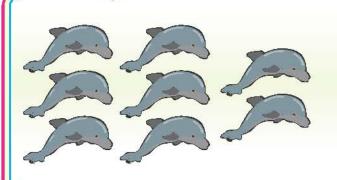


How many birds?

3 fly away

How many left?





How many fish?

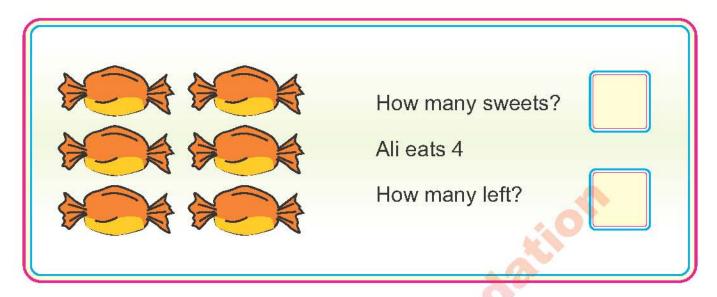
5 swim away

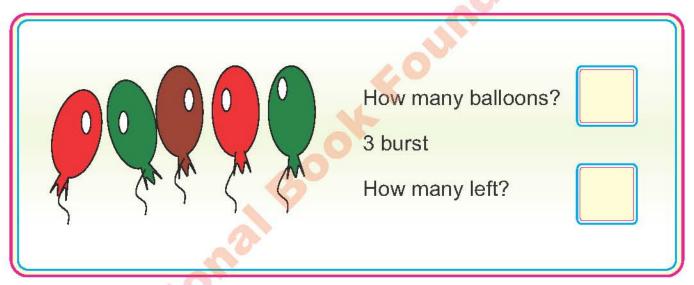
How many left?

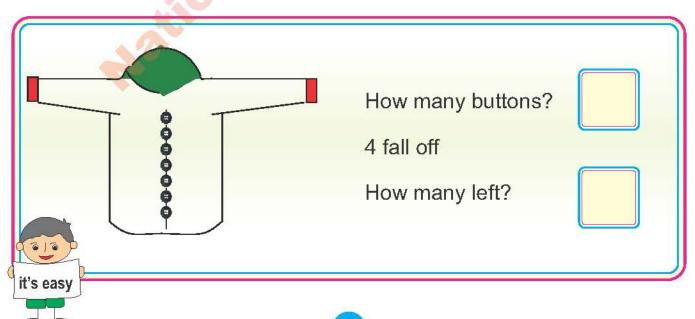












Saba had 9 sweets. she ate 5 How many sweets are left?

Left	-	4
Eaten	= -	- 5
Total sweets	=	9

Raza had 18 balloons. 5 got burst. How many balloons are left?

There are 16 eggs in a basket. 5 of them are broken. How many eggs are left?

There are 19 birds sitting in a tree.

14 flew away. How many
birds are left?

There are 17 students in a class, 6 are girls. How many boys are in the class?

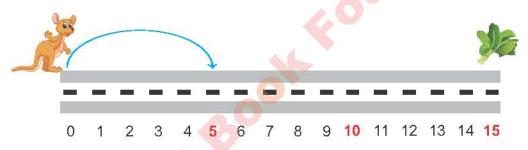


To reach the football, how many jumps of 2 will the boy have to move?

0 1 2 3 4 5 6 7 8 9 10

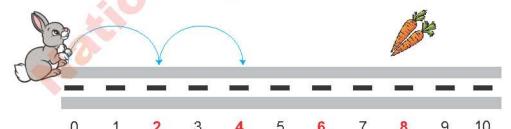
The boy will take 5 jumps to reach football.

To reach the spinach, how many jumps of 5 will the Kangroo have to move?

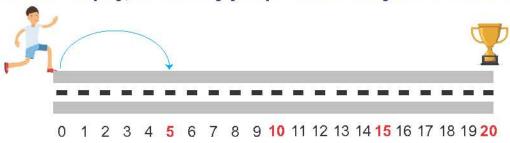


The Kangroo will take 3 jumps to reach spinach.

To reach the carrot, how many jumps will the rabbit have to move?



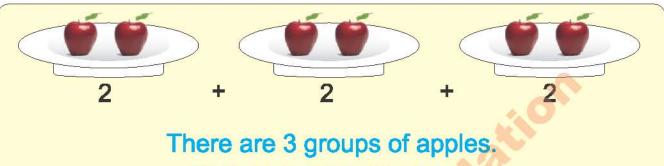
To reach the trophy, how many jumps will the boy have to move?











Each group has 2 apples. 3 groups of 2 = 3 twos $2+2+2=3\times2=6$

"x" means multiplication to put "equal groups together".

Multiplication means "repeated addition".

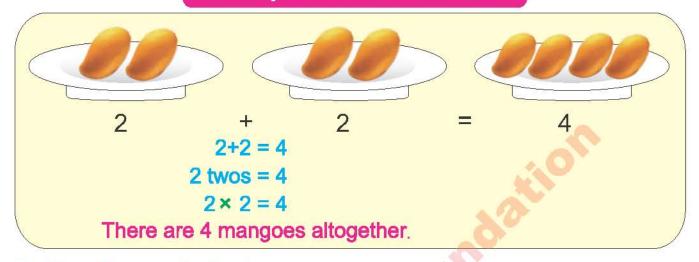
1. Write the missing numbers.







Multiplication table of 2

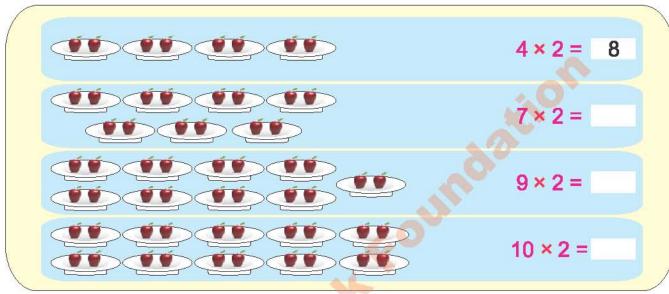


2. Count the apples by twos.

	<u> </u>	<u>_</u>	
2	1two	= 1 × 2 = 2	
2 + 2	2 twos	= 2 × 2 = 4	
2 + 2 + 2	3 twos	= 3 × 2 = 6	
2 + 2 + 2 + 2	4 twos	= 4 × 2 = 8	
2 + 2 + 2 + 2 + 2	5 twos	= 5 × 2 = 10	
2 + 2 + 2 + 2 + 2 + 2	6 twos	= 6 × 2 = 12	
2 + 2 + 2 + 2 + 2 + 2	7 twos	$= \boxed{7 \times 2 = 14}$	
2 + 2 + 2 + 2 + 2 + 2 + 2	8 twos	= 8 × 2 = 16	
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	9 twos	= 9 × 2 = 18	
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2	10 twos	= 10 × 2 = 20	
+2 +2 +2 +2 +2 +2 +2 +2			
2 4 6 8 10 12	14 16	18 20	



1. Solve.





 5×2 is equal to 2×5 . Both have the same total of 10.

$$5 \times 2 = 10$$

$$2 \times 5 = 10$$

2. Write the missing numbers.

$$3 \times 2 =$$

$$2 \times 5 =$$





Multiplication table of 5

秦秦秦秦秦

5



5

+

10

5+5 = 10

2 fives = 10

 $2 \times 5 = 10$

There are 10 pineapples altogether.

Count the pineapples by fives.

5 + 5

***** ***** ****

5 + 5 + 5

5 + 5 + 5 + 5

5 + 5 + 5 + 5 + 5

5 + 5 + 5 + 5 + 5 + 5

5 + 5 + 5 + 5 + 5 + 5 + 5

5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5

5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5

1 five = 1 × 5 = 5

2 fives = 2 × 5 = 10

3 fives = 3 ×5= 15

4 fives = 4 × 5 = 20

5 fives = 5 \times 5 = 25

6 fives = 6 × 5 = 30

7 fives = 7 \times 5 = 35

8 fives = 8 × 5 = 40

9 fives = 9 ×5= 45

10 fives $= 10 \times 5 = 50$

 +5
 +5
 +5
 +5
 +5
 +5
 +5
 +5
 +5

 5
 10
 15
 20
 25
 30
 35
 40
 45
 50





Multiplication table of 10

10

10



10 + 10 = 20

2 tens = 20

 2×10

There are 20 pencils altogether.

Count the pencils by 10

4 1		1 ×10 =10
1 ten	_	1 × 10 – 10

2 tens
$$= 2 \times 10 = 20$$

5 tens
$$= 5 \times 10 = 50$$

7 tens
$$= 7 \times 10 = 70$$



Commutative property of multiplication

$$\frac{1}{4 \times 2} = \frac{1}{8}$$

$$2 \times 4 = 8$$

$$4 \times 2 = 2 \times 4 = 8$$

This is called commutative property of multiplication.

1. Fill in the blanks.

 2×10

1 × 9

 4×2

$$4 \times 5 = 5 \times 4 = 20$$
 $5 \times 3 = 3 \times 5 = 5$
 $2 \times 6 = 6 \times 2 = 5$
 $5 \times 2 = 2 \times 5 = 5$
 $3 \times 10 = 10 \times 3 = 5$
 $2 \times 9 = 9 \times 2 = 5$
 $5 \times 6 = 6 \times 5 = 5$

10 × 2

9 ×

2 ×

$$\begin{bmatrix}
 10 \times 6 & = 6 \times 10 & = \\
 4 \times 10 & = 10 \times 4 & = \\
 2 \times 7 & = 7 \times 2 & = \\
 5 \times 9 & = 9 \times 5 & = \\
 2 \times 6 & = 6 \times 2 & = \\
 5 \times 8 & = 8 \times 5 & = \\
 2 \times 7 & = 7 \times 2 & = \\
 2 \times 3 & = 3 \times 2 & = \\
 5 \times 3 & = 3 \times 5 & = \\
 10 \times 7 & = 7 \times 10 & = \\
 \end{bmatrix}$$



1. Write the missing numbers.

$$5 \text{ twos} = 5 \times 2 = 10$$





1. Fill in the blanks.

$$2 \times 6 = 12$$

$$2 \times 8 =$$

$$3 \times 9 =$$

$$5 \times 5 =$$

$$2 \times 10 =$$

$$2 \times 10 =$$

$$2 \times 6 =$$

$$2 \times 2 =$$

$$10 \times 9 =$$



 For effective learning and teaching, use 'Urdu or local language' as a medium of instruction to explain the concept of multiplication.

Explain the concept of 'multiplication as repeated addition' using teaching aids.

MA MA



MULTIPLICATION

1. Fill in the blanks.

$$3 \times 5 =$$

$$\times 5 = 35$$

$$\times 2 = 18$$

$$*2 = 4$$

$$\times 1 = 3$$

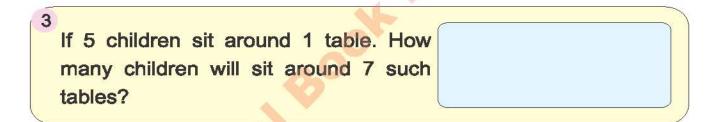




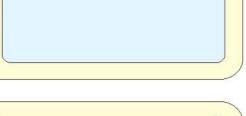
Real Life Problems

In 1 packet there are 4 pencils. How many pencils are there in 5 such packets?

There are 2 fans in each room. How many fans are there in 8 such rooms?



In a school bag of a student, there are 9 books. How many books are there in 10 bags?



5

There are 10 sweets in a packet. How many sweets are there in 3 such packets?



Explain to the students to solve real life problems related to multiplication using clue words.

Division as Successive Subtraction

I have 4 candies. I will distribute them equally among all children.

Mother brings candies for us.



The mother gives 1 candy to each child.

$$4 - 2 = 2$$





Now, each child has 2 candies

$$2 - 2 = 0$$

0 candies are left with mother



So, each child gets 2 candies.





Subtracting 2 two times from 4, we get 0.

$$4 - 2 - 2 = 0$$



- For effective learning and teaching, use 'Urdu or local language' as a medium of instruction to explain the concept of division.
- Demonstrate the concept of successive subtraction using teaching aids.

Divide 6 bananas in 2 children using successive subtracting.











$$\frac{2}{0}$$
 Third time



$$6-2-2-2=0$$

Subtracting 2 three times from 6 we get 0. So, each child gets 3 bananas.





- division is a successive subtraction.
- the symbol of division is '±'.

We can write as, $6 \div 2 = 3$

Try Yourself

Divide 9 apples in 3 children using successive subtraction.

Divide 10 pencils in 5 children using successive subtraction.

Subtracting ___ times 3 from

9, we get 0.

Subtracting ___ times 5 from 10, we get 0.

So, each child gets ____ apples. So,each child gets ____ pencils.



Divide the children in groups. Explain the concept of 'division as successive subtraction' using concrete objects. Let them practice by changing objects and the number of children in the groups.







6 biscuits are distributed into 2 plates. Each plate has 3 biscuits.

We say, 6 biscuits are divided into 2 groups.



•





6

.

2

=

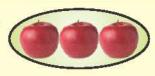
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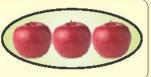
Division " - " means "to divide equally"

Division is also successive subtraction.

1. Solve the followings.

Share 6 apples equally among 2 boys.





Share 15 sweets equally among 5 children.









Share 20 mangoes equally among 10 men.



Share 30 ice-cream equally among 5 girls.









6 biscuits are distributed into 2 plates. Each plate has 3 biscuits.

We say, 6 biscuits are divided into 2 groups.

So, 2 biscuits cannot divide to 6 children (full biscuit).

6 ÷ 2 = 3

2 is not equal to 3

Division of one number by an other number cannot be done in any order.

So, $6 \div 2$ is not equal to $2 \div 6$.



- For effective learning and teaching, use 'Urdu or local language' as a medium of instruction to explain the concept of division.
- Demonstrate the concept of successive subtraction using teaching aids.











Real Life Problems

1

30 chairs are arranged in 5 equal rows. How many chairs are there in each row?

2

2 buses have 8 wheels. How many wheels does each bus has?



3

15 notes books are given to 5 children. How many notebooks does each child get?

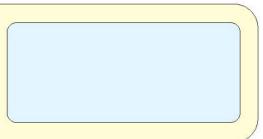


4

On 10 similar shelves there are 40 books. How many books are there on each shelf?



Zain had 20 bananas. He distributed them among 5 friends. How many bananas did each friend get?









Fractions



By the end of this unit, you will be able to:

 Recognize, find, name and write fractions: half(1/2), quarter(1/4),two quarter(2/4), three quarter(3/4) using pictorial representation.

We often divide things into two or more equal parts.

A rope

2 equal parts of rope

3 equal parts of rope

4 equal parts of rope

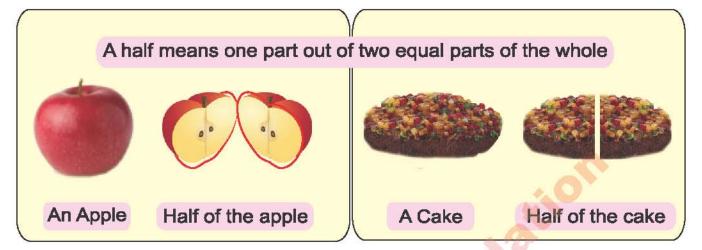
Each part of rope is called a fraction of the whole

A fraction is a part of a whole. It tells us about how many parts have been taken out of the whole parts.

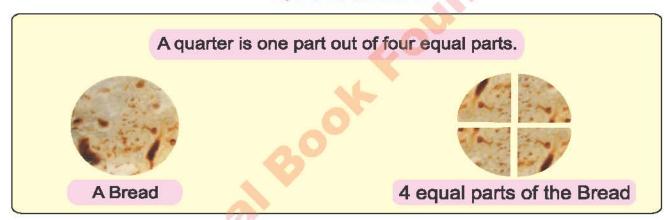




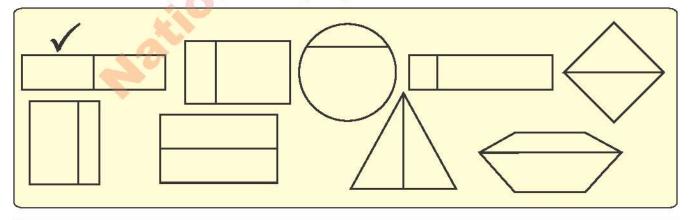
HALF



QUARTER

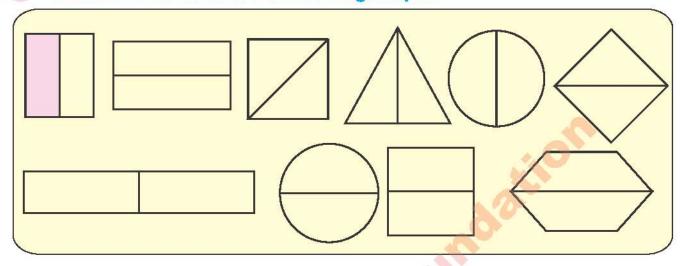


1 Tick the shapes with two equal parts.

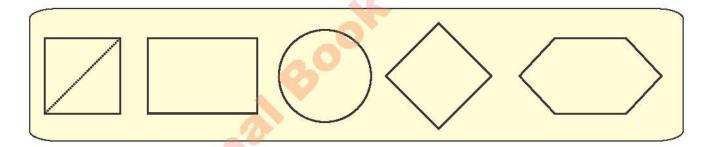


- To the second se
 - For effective teaching and learning, use 'Urdu or local language' as a medium of instruction to explain the concept of fractions.
 - Demonstrate the concept of fractions using teaching aids (pieces of paper, chart, equal wooden parts, etc.).

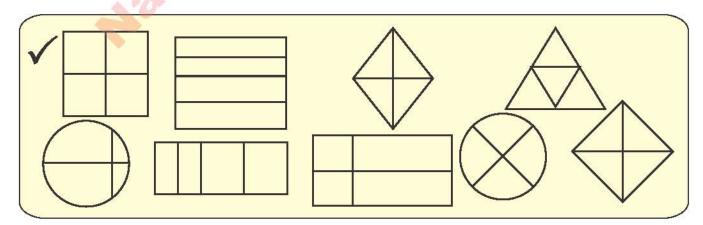
Colour half of each of the following shapes:



3 Draw a line in the shape to divide the shapes into two halves (equal) parts



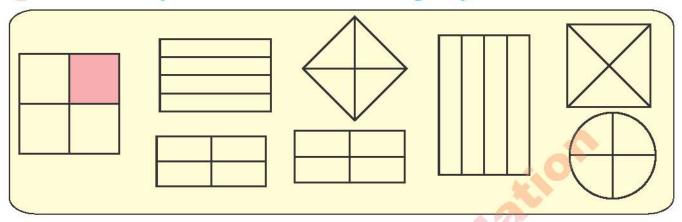
4 Tick the shapes with four equal parts.



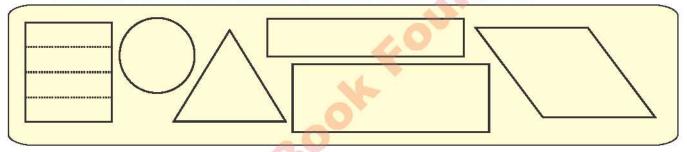




5 Colour one quarter of each of the following shapes

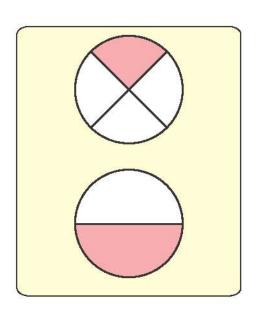


6 Draw lines to divide the shapes into four equal parts.



7 Match the columns.

Half
Quarter



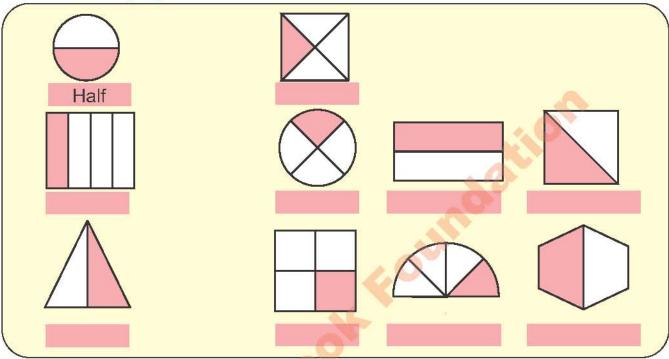
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Explain the concept of one-half with the participation of students using teaching aids (chart, two equal wooden pieces, etc.).

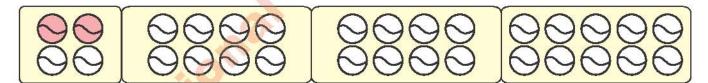




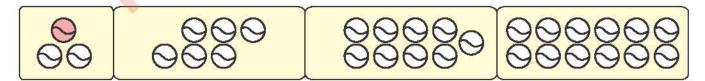
8 Write the fraction represented by the coloured part of each of the following figures



9 Colour one half of the balls.



10 Colour one third of the balls.



- 11 Divide a piece of paper into 2 equal parts, colour half of it.
- 12 Divide a piece of paper into 4 equal parts, colour a quarter of it.

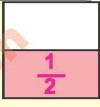




More about Fractions

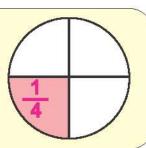
One half

In the figure, a square is divided into two equal parts. Each of these parts is called one half of the square. In symbol, we express one half as $\frac{1}{2}$ and read as "one over two" or "one by two".



Quarter

In the figure, a circle is divided into four equal parts. Each of these parts is called a quarter or one fourth of the circle. In symbol, we express one fourth as $\frac{1}{4}$ and read as "one over four" or "one by four".



1 Write the fraction in symbols for the coloured part of each of the following.

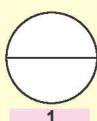




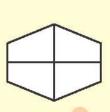
2 Colour the part according to the fraction written with each figure.



1 4

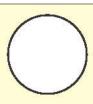


1/2



4

3 Divide the figure into equal parts according to the given fraction.



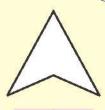
1/2



1



1



1 2



Some more Fractions

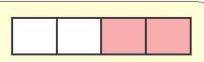
Two fourth means two parts out of four equal parts.

In symbol, we write $\frac{2}{4}$.

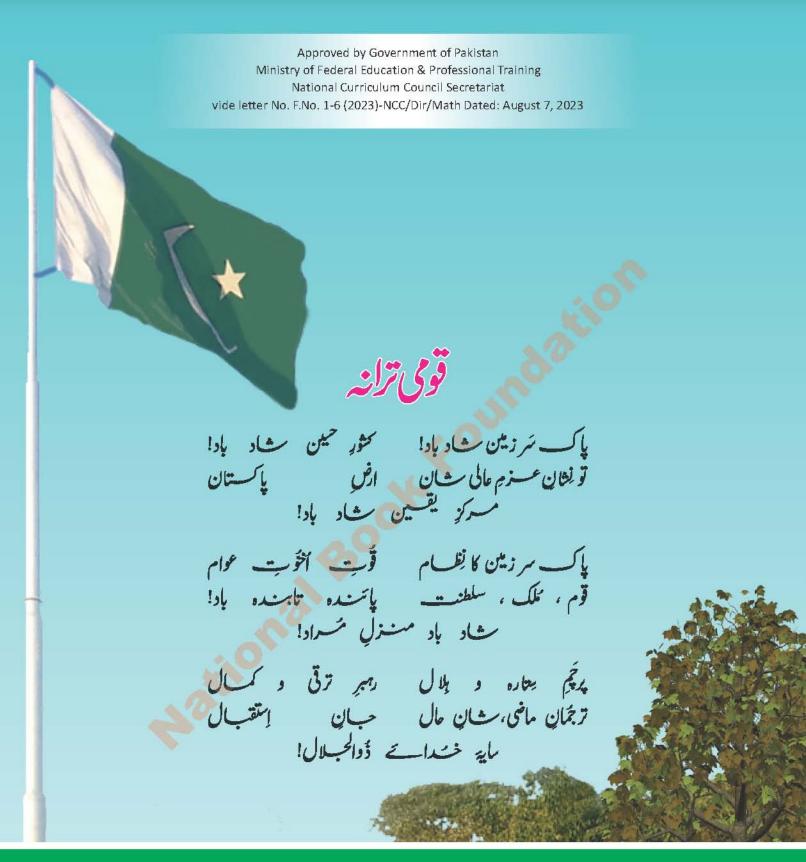


Two squares are filled out of four squares.

It is written as 2.



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