



THE WORLD OF MATHS

Part-2

Textbook of Mathematics for Class 4

For Free Distribution in All Government Schools



**Rajasthan State Council of Educational
Research and Training, Udaipur**



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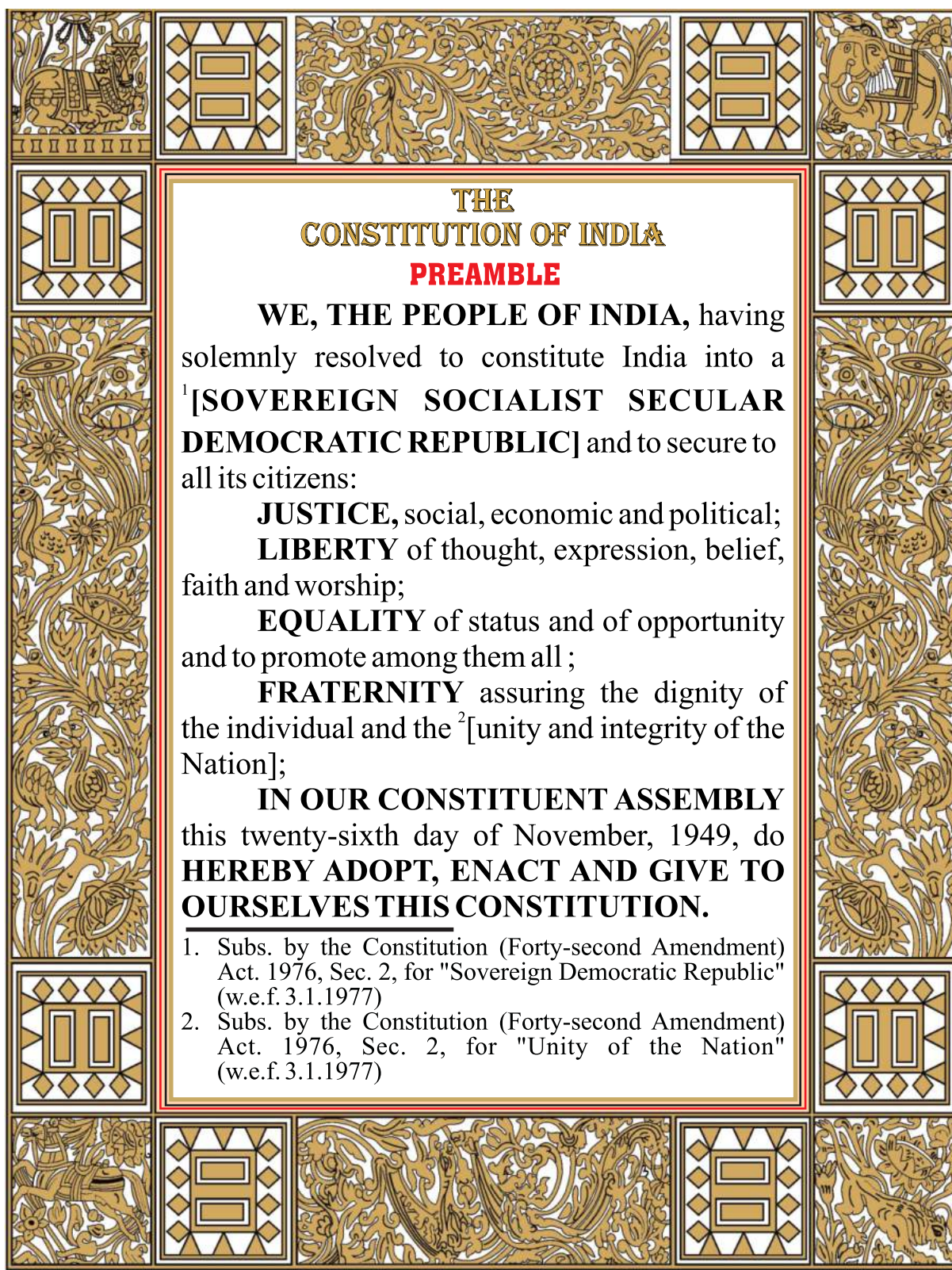
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Special Note: The material compiled in this book is influenced by several sources and we express our gratitude to all of them.



**THE
CONSTITUTION OF INDIA
PREAMBLE**

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a¹**[SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC]** and to secure to all its citizens:

JUSTICE, social, economic and political;
LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity and to promote among them all ;

FRATERNITY assuring the dignity of the individual and the²[unity and integrity of the Nation];

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

1. Subs. by the Constitution (Forty-second Amendment) Act. 1976, Sec. 2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
2. Subs. by the Constitution (Forty-second Amendment) Act. 1976, Sec. 2, for "Unity of the Nation" (w.e.f. 3.1.1977)

FOREWORD

The preliminary stage of education for children (ages 6 to 11) is the most important. It is the time when they begin to explore, understand and learn about the world around them. The National Education Policy 2020 (NEP-2020) adopts this idea and emphasizes on making education interesting, enjoyable and experiential. This education policy recommends comprehensive reforms and the adoption of innovative approaches in the Indian Education System. The basic objective of this policy is to empower students with creativity, logical reasoning and practical skills to face the challenges of the 21st century. Under this, special emphasis has been laid on making education more inclusive, holistic and skill-based.

Keeping these objectives in mind, the Rajasthan State Council of Educational Research and Training, Udaipur, has developed textbooks for primary classes. To ensure the all-round and holistic development of children, these textbooks integrate Indian knowledge traditions, 21st-century skills, social-emotional skills, arts and physical education. These textbooks not only encourage logical thinking, clear conceptual understanding, and creativity, but also strengthens the tendencies of inclusion, cultural unity and harmony.

The textbooks include effective, interesting and creative activities appropriate to the class level, along with interesting stories, poems and content from other genres, so that children can learn in an easy and enjoyable manner. There are also Suggestions for teachers at various places so that they can help children learn more effectively.

In this important journey of textbook development, the contribution of selected teachers from the State, experts at the State and National Levels and Voluntary Organizations has been significant. Without their cooperation, suggestions and impartial perspective, it would not have been possible to carry out this work effectively. We express our heartfelt gratitude to all stakeholders for their unprecedented contribution. Special thanks to all the esteemed Members of the Curriculum Review Committee, whose invaluable suggestions have guided the enhancement of this textbook.

The newly developed textbook is expected to make the learning-teaching process in the classroom smooth, enjoyable and excellent, and this will only be possible with the active cooperation of teachers. The role of teachers is not only limited to impart knowledge; they are also guides who inspire students to learn actively, they should adopt child-centered teaching methodology, while using this textbook allowing students to learn according to their interests and abilities. Additionally, they should pay special attention to promoting 21st-century skills, encouraging social-emotional development and effectively incorporating the values of Indian knowledge traditions into classroom teaching.

This book is in your hands. Millions of children in the state are eagerly looking upto you for learning. With our combined efforts, we are confident that they will certainly achieve their learning goals. Your thoughts and suggestions for improving the quality of the book (To enhance children's learning capacity) are always welcome.

Director

Rajasthan State Council of Educational Research
and Training, Udaipur

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Free distribution

INDEX

Chapter No.	Chapter Name	Page No.
1	A Trip to the Market	1
2	Birthday Party	11
3	Comparison and Addition-Subtraction of Numbers	18
4	A Golden Trip to Jaisalmer	28
5	Let's Learn Tables	34
	We learnt and understood - 1	40
6	Mother prepared Ghevar	42
7	Car Parking	53
8	Birthday at Bear's Home	58
9	Vedic Mathematics	66
10	Order of Progression	71
	We Learnt and Understood - 2	78
11	Different Shapes	81
12	The Magic of Mirror	91
13	Capacity	97
14	Measurement of Length	104
15	Who Is The Heaviest?	112
	We Learnt and Understood - 3	117
16	I Don't Stop	120
17	Rupees - Paise	128
18	Perimeter and Area	135
19	Who Occupied How Much Space?	141
20	The Game of Data	150
	We Learnt and Understood - 4	156



Let's discuss

Subodh went to the city to visit his aunt during the holidays. One day, he went to the market with his aunt. He spotted shoes in a shop, and like everything else there, they had price tags. When Subodh struggled to read the shoes' price, his aunt helped him.

□1275

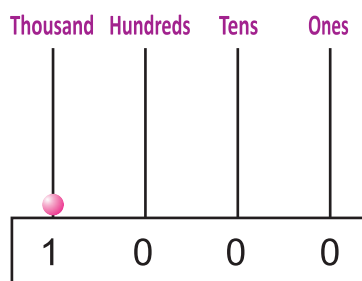
Oh! It has four digits. I have only learned to read numbers with three digits. The largest three-digit number is 999. This is even bigger than that.



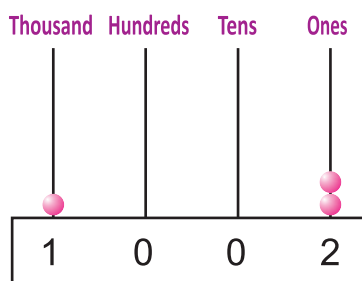
Yes, you have learned to read numbers up to 999. Adding 1 to 999 gives 1000, and this is the smallest four-digit number. 1275 also has four digits, and it is one thousand two hundred seventy-five. I will teach you how to read it when we go home.

After the holidays, Subodh went to school and told his classmates about it.

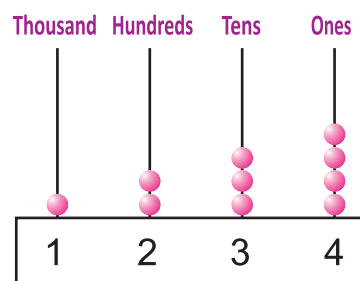
Garima - Our teacher explained it with the help of an abacus.



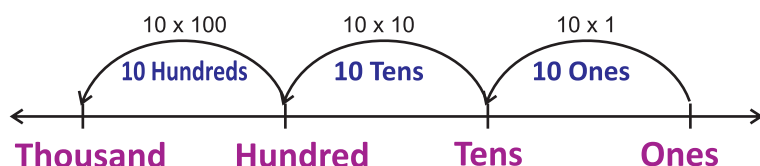
One thousand



One thousand two



One thousand two hundred thirty-four



How many ones make one ten?

How many tens make one hundred?

How many hundreds make one thousand?

Let's solve

Make a number chart starting from 1001. Some numbers are written in the table. Based on these, guess the pattern and fill in the table:

1001	1011		1031						
1002									
1003									
				1044					
		1025							
								1087	
							1078		
	1019					1069			1099
1010					1060				@

- In each column, as I move from top to bottom, the numbers increase by 1.
- In each row, as I move from left to right, I see the numbers _____ by 10. (increasing/decreasing)

In the number marked with @, the digit in the thousands place is _____, the digit in the hundreds place is _____, the digit in the tens place is _____, and the digit in the ones place is _____.

Based on the numbers written in the table, guess the pattern and fill in the table -

1200	2200								
									8400
1600									
				6100					@

- In the number marked with @, the digit in the thousands place is _____, the digit in the hundreds place is _____, the digit in the tens place is _____, and the digit in the ones place is _____.

Writing Numbers in Words

You have learned to write numbers up to 999 in words in the previous class. Let's continue this sequence and practice writing numbers greater than 999 in words. To write a number in words, write Ones, Tens, Hundreds, ... below each digit of the number.



(Start writing Ones, Tens, Hundreds, ...from the right below the digits and move to the left.)

The digits written above Tens and Ones are read together, and the digit written above Hundreds is read alone. The digit written above Thousands will also be read alone.

7 3 5 = Seven hundred thirty-five
H. T. O.

6 0 5 = Six hundred five
H. T. O.

1 2 3 5 = One thousand two hundred thirty-five
Th. H. T. O.

5 0 7 3 = Five thousand zero hundred seventy-three
Th. H. T. O. = Five thousand seventy-three

2 0 0 2 = Two thousand zero hundred two
Th. H. T. O. = Two thousand two

8 0 0 0 = Eight thousand zero hundred zero
Th. H. T. O. = Eight thousand



Since zero (0) means nothing. So zero hundred cannot be read or written.

Writing Numbers in Digits

You have learned to write numbers up to nine hundred ninety-nine in digits. Let's continue this sequence and practice writing numbers greater than nine hundred ninety-nine in digits.

To write a number in digits, first, starting from the right, create a group of three boxes. Then, as needed, create groups of two boxes after that.

Below these boxes, starting from the right and moving left, write "ones, tens, hundreds, thousands, ten thousands," and so on.

Th.	H.	T.	O.

Now, one digit is written in each box.

3	1	0	5
Th.	H.	T.	O.

Example - Three thousand one hundred five.

If a number has a single digit, a 0 (zero) is placed before it on the left to make it a two-digit number.

For example- seven = 07, nine = 09, etc.

Hundred is written as a single digit.

Four thousand three hundred twelve =

4	3	1	2
Th.	H.	T.	O.

 = 4,312

Five thousand six hundred five =

5	6	0	5
Th.	H.	T.	O.

 = 5,605

Nine thousand =

9	0	0	0
Th.	H.	T.	O.

 = 9,000



Nine thousand zero hundred zero. Oh!
No, it is read as nine thousand only.

Place Value

In a number, the place value of a digit is determined by the specific position it occupies.

In 5, 2 1 6
Th. H. T. O.

- Place value of digit 5 at thousands place = 5 thousands = $5 \times 1000 = 5000$
- Place value of digit 2 at hundreds place = 2 hundreds = $2 \times 100 = 200$
- Place value of digit 1 at tens place = 1 ten = $1 \times 10 = 10$
- Place value of digit 6 at ones place = 6 ones = $6 \times 1 = 6$

To find the place value of a digit -

One's digit is multiplied by	1
Ten's digit is multiplied by	10
Hundred's digit is multiplied by	100
And Thousand's digit is multiplied by	1000

In any number, the digit 0 (zero), no matter where it appears, its place value is always 0.

Expansion and Expanded Form of Numbers

To write the expanded form of a number, find the place value of each digit of the number and write it as a sum.

Example - In the number 637, the place value of digit 6 is 600, the place value of digit 3 is 30, and the place value of digit 7 is 7.

Therefore, the expanded form of $637 = 600 + 30 + 7$

$$1035 = 1 \text{ thousand} + 0 \text{ hundred} + 3 \text{ tens} + 5 \text{ ones}$$

$$= 1 \times 1000 + 0 \times 100 + 3 \times 10 + 5 \times 1$$

$$= 1000 + 000 + 30 + 5$$

$$= 1000 + 0 + 30 + 5$$

The expanded form of
1035 is = 1 thousand +
0 hundred + 3 tens + 5 ones
= 1000 + 30 + 5

Let's solve

(i) The place value of digit 7 in 875 is

(ii) The place value of digit 4 in 5470 is

(iii) The place value of digit 8 in 8752 is

(iv) The place value of digit 6 in 6750 is

(v) The place value of digit 9 in 9672 is

(vi) The place value of digit 7 in 6724 is

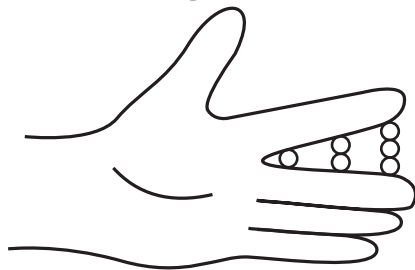
(vii) Expanded form of $7342 = 7000 + 300 + 40 + 2$. (viii) Expanded form of $9652 =$ _____.

(ix) Expanded form of $3451 =$ _____.

(x) Expanded form of $7654 =$ _____.

Comparing Numbers

Look at this position of fingers -



Less

More

Small

Big

A small bead is placed in the smaller space between the fingers, and more beads are placed further out. Therefore, the open end of the symbol is pointed towards the larger number.

A number with more digits is greater than a number with fewer digits, and the "greater than" ($>$) symbol is placed between them. For example, $28 > 7$, $312 > 67$, $4209 > 573$.

A number with fewer digits is smaller than a number with more digits, and the "less than" ($<$) symbol is placed between them. For example, $5 < 12$, $72 < 392$, $187 < 2732$.

When comparing two numbers:

If both numbers have the same number of digits, compare the leftmost digits of both numbers first.

If the leftmost digits are also the same, then progressively compare the digits to the immediate right. For example, $732 > 632$, $8732 < 8932$, $6876 > 6856$, $7305 < 7307$.

Ascending and Descending Order

When writing given numbers in ascending order, first write the smallest number, then the next larger number, and then the next larger number.

Similarly, when writing given numbers in descending order, first write the largest number, then the next smaller number, and then the next smaller number.



Ascending (small to big) order of numbers
 $3752, 817, 9573, 62, 870, 651$ is $= 62, 651, 817, 870, 3752, 9573$.

Descending (big to small) order of numbers
 $3752, 817, 9573, 62, 870, 651$ is $= 9573, 3752, 870, 817, 651, 62$.



Let's solve

Write the following numbers in ascending order -

(i) $35, 6547, 3278, 9812, 873$ =

(ii) $98, 765, 8126, 276, 54$ =

Write the following numbers in descending order -

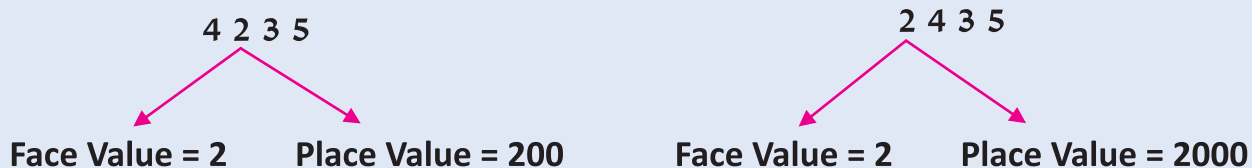
(i) $65, 876, 9870, 765, 8764$ =

(ii) $98, 234, 5647, 8723, 84$ =

Let's try

Also know -

The face value of any digit is equal to the value of that digit itself and does not change even if its position changes, whereas the place value changes with the change in position.



International Numeral	1	2	3	4	5	6	7	8	9	0
Devanagari Numeral	१	२	३	४	५	६	७	८	९	०

Roman Numeral System

The Roman numeral system is also called the Roman numbering system. It was developed in ancient Rome to represent numbers. In this numeral system, letters of the Latin alphabet are used to represent numbers. The Roman numeral system mainly has seven symbols.

I = 1 (one) V = 5 (five) X = 10 (ten) L = 50 (fifty)

C = 100 (one hundred) D = 500 (five hundred) M = 1000 (one thousand)

Numbers are written in Roman numerals using these seven symbols.

International Numeral	1	2	3	4	5	6	7	8	9	10
Roman Numeral	I	II	III	IV	V	VI	VII	VIII	IX	X

Subodh and Garima made this table. You also read and see -

	Numbers	Thousands	Hundreds	Tens	Ones
One-digit	Smallest				1
	Largest				9
Two-digit	Smallest			1	0
	Largest			9	9
Three-digit	Smallest		1	0	0
	Largest		9	9	9
Four-digit	Smallest	1	0	0	0
	Largest	9	9	9	9

Exercise

1. The correct representation of the number 999 is -

- (a) 99 tens + 99 ones (b) 9 tens + 99 ones
(c) 90 tens + 99 ones (d) 90 hundreds + 9 ones ()

2. Which of the following options is equal to 1111 ?

- (a) 10 hundreds 11 tens (b) 11 hundreds 11 tens
(c) 1 thousand + 1 hundred 1 ten + 11 ones (d) 1 thousand 111 ones ()

3. Circle the correct number -

- (i) Five thousand fifty-six - 5056 556 5506
(ii) Nine thousand seven hundred ten - 9701 9710 9107

4. Write the expanded form of the following numbers -

- (i) 9763 = + + +
(ii) 7934 = + + +

5. Write the place value of the red colored digit in the numbers given below -

- (i) 6 7 4 3 (ii) 5 4 3 2
(iii) 4 6 0 7 (iv) 3 2 1 8

6. Write the place value of each digit 9 in 9999.

.....

7. Write the place value of the digit five in 6548.

.....

8. Write the following numbers in words-

- (i) 6578 (iii) 2096
(ii) 8756 (iv) ५८५३

9. Write the following numbers in digits -

- (i) Three hundred twelve (ii) Five thousand five
(iii) Seven thousand eight hundred ninety
(iv) Eight thousand two hundred eighty

10. Write the missing numbers -

- (i) 6625 6630
(ii) 9162 9165 9168
(iii) 3220 3222 3225
(iv) 8100 8103 8106

11. Find the place value of digits 3 and 6 in the numbers given below -

- (i) 6531 (ii) 3416
(iii) 4356 (iv) 3648

12. Insert the appropriate symbol $<$, $>$, or $=$ in the blank spaces between the numbers given below:

4572 7452	1100 1010	1000 1001
6891 6891	7689 7690	2345 2346
9205 9105	6000 6000	8888 8888
3005 3050	4321 4321	၇၄၀၀ ၇၀၄၀
8743 8734	9999 9998	၈၄၄၄ ၈၄၄၃

13. Write the number that comes just before -

- (i), 8901 (ii), 2345
(iii), ၆၇၄၀ (iv), 4599
(v), 1020 (vi), 9999

14. Write the number that comes just after -

- (i) 3099, (ii) 5678,
(iii) 7890, (iv) 4321,

(v) 1500,

(vi) ୭୯୯୯,

15. Write the numbers in descending order -

(i) 2345, 1456, 1987, 2678, 1765

(ii) 3098, 1203, 4590, 2389, 3999

(iii) 4102, 2501, 3987, 1023, 2876

(iv) 5678, 1234, 3456, 7890, 2345

(v) ୩୦୦୧, ୫୭୮୯, ୧୫୫୫, ୩୮୯୦, ୧୫୭୦

16. Write the numbers in ascending order -

(i) 8900, 7654, 9800, 8456, 9999

(ii) 5000, 4321, 6789, 3210, 6001

(iii) 1500, 2450, 1900, 2250, 2100

(iv) 9999, 8888, 7777, 6666, 5555

(v) ୩୫୦୦, ୩୯୦୦, ୩୧୦୦, ୩୭୦୦, ୩୬୦୦

17. A number has ୫ hundreds, ୩ thousands, ୫ tens, and ୧ ones. Write that number:

18. I am a four-digit number. My ones digit is ୧. My tens digit is ୧ more than my ones digit. My hundreds digit is half of my tens digit, and my thousands digit is ୫. What is my value?

19. A four-digit number is formed using the digits 9, 4, 7, and 3. This number is greater than 6500 and smaller than 7400. Which digit can be in the ones place of the number?

20. I am a four-digit number. My ones and thousands digits are the same, and my tens and hundreds digits are double my thousands digit. Who am I?



Let's discuss

Tanu's 11th birthday is on the 10th of this month, and her father gave her the responsibility of planning her birthday party in the morning.

Tanu started planning the party with her friends Abhay and Jyoti.

Jyoti said, "We will have the party at home." Abhay suggested, "Let's make a list of what all we need to do."

Approximately 35 people will come to the party.

We also need to plan the menu for tea and snacks, gather decorations for the house, and decide what games to play at the party.

"Oh! We forgot the cake!" Tanu exclaimed. "A party without a cake?" the three friends burst into laughter.

That evening, Tanu excitedly shared her party plans with her father. Papa was delighted with what he heard and told her to create a budget for the party.

"Budget! What's that?" Tanu asked with surprise. Papa said, "It's an estimated record of how much each item will cost."



Item	Quantity	Amount
Cake	1	₹300
Fruits		
Biscuits	20 packets	
Juice		
Mathri _(savory snack)		
Sweets		
Balloons	7 packets	
Ribbon		
Gifts		
Games		
Total Expense		

Help Tanu to make the budget.

Look at the table and answer

- For which items will the amount be spent in the tens digit?
- For which items will the amount be spent in the hundreds digit?
- Will the amount for any item be spent in the thousands digit?

Let's Play

Many of Tanu's friends attended her birthday party, and everyone had a great time. Tanu's father organized some games, which included both physical activities and mathematical problems. To encourage participation, he offered extra sweets to those who solved the problems correctly.

Write the place value of digits 2 and 5 in the given numbers:

Number	Place value of digit 2	Place value of digit 5
2075	2000	5
3529		
8254	200	50
2053		
5662		
1325		

You also try

Tell how many thousands, how many hundreds, how many tens, and how many ones are in the numbers:

Number	Thousands	Hundreds	Tens	Ones
4127	4	1	2	7
2865				
8090				
734				
6396				
562				

The children enjoyed the games and math problems.

Jyoti then shared a dice game she knew from school. She explained, "My teacher divided us into groups of four. We had to roll a die, and each student would write down their number in a notebook. For example, if the rolls were 6, 3, 4, and 3, the number formed would be 6343."

We also wrote these numbers out in words," she continued. During one game, we rolled the digits 1, 5, 6, and 2. From these, we formed numbers like 1256 (one thousand two hundred fifty-six) and 2156 (two thousand one hundred fifty-six). We even identified the smallest and largest possible numbers." Everyone enthusiastically agreed, "This game will be a lot of fun. Let's play!"

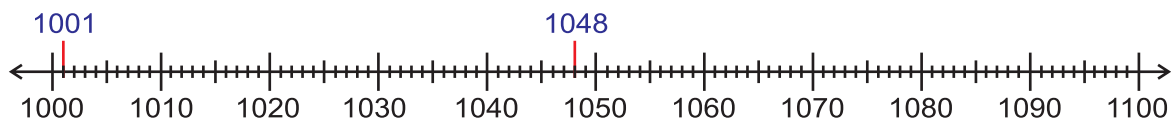
Now it's your turn to try!

Assume that your friends rolled the dice and the digits 3, 6, 1, and 4 appeared. Use these digits to form 4-digit numbers and write them in words -

- | | Number | In words |
|---|---------------------------------------|----------|
| (i) The smallest number formed from these | | |
| (ii) The largest number formed from these | | |
| (iii) Write any five numbers formed from these digits | , , , , | |
| (iv) Write all five formed numbers in ascending order | , , , , | |

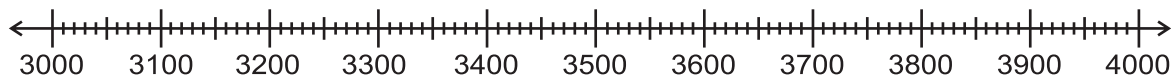
Number Line

1001 and 1048 are shown on the number line. You also show 1045, 1079, and 1094 on the number line -



Show the following numbers on the number line given below -

3020, 3080, 3170, 3240, 3290, 3310, 3390, 3430, 3460, 3750, 3960



Let's Solve

Read the number names and circle the correct number -

- (i) Three thousand seven hundred fifty-nine 769 3759 3957 3579
- (ii) Five thousand three hundred twenty 5302 5203 5320 5023

Write the given numbers in expanded form and words

Numbers	Write in expanded form	Write in words
8734	$8000 + 700 + 30 + 4$	Eight thousand seven hundred thirty-four
7306		
205		
1765		
3009		

Let's Play

For their next game, the children write their birth years on paper and then arrange themselves in two lines: one from largest to smallest birth year, and another from smallest to largest. After playing, Tanu explains that arranging numbers from smallest to largest is called ascending order, and arranging them from largest to smallest is called descending order.



Write the given numbers in ascending order -

Numbers	Ascending Order
875, 89, 630, 75, 237	75, 89, 237, 630, 875
9865, 4005, 5672, 1263, 360	
5687, 9843, 2765, 1987, 3845	
3978, 9125, 7492, 3352, 1745	
154, 7684, 9873, 7146, 290	

Write the given numbers in descending order -

Numbers	Descending Order
874, 398, 1208, 2654, 25	2654, 1208, 874, 398, 25
985, 405, 5432, 1263, 360	
6247, 2438, 2761, 5265, 3820	
3002, 912, 5308, 7649, 3762	
185, 7204, 9353, 1251, 2802	

Abhay: We played a number game at school where the teacher used shape symbols on a circular chart to create numbers.

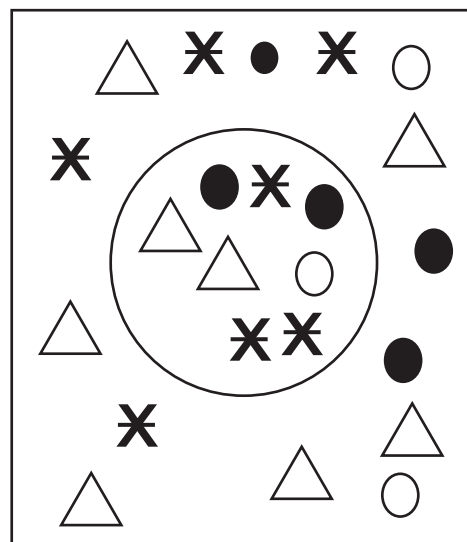
$\triangle$ = thousands, $\times$ = hundreds, $\bullet$ = tens, $\circ$ = ones

For example, in the circle drawn on the chart:

$\triangle = 2$, $\times = 3$, $\bullet = 2$, $\circ = 1$.

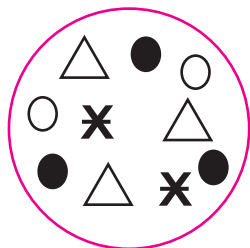
Hence, the number formed is 2321 (two thousand three hundred twenty-one).

Let's make numbers using other circular charts in this way and write them in words.



Now it's your turn to create some numbers!

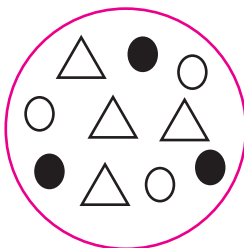
(i)



Number In words

.....

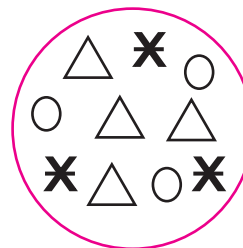
(ii)



Number In words

.....

(iii)



Number In words

.....

After the games, it was snack time, and everyone received biscuits. Madhav remarked, "I got the same number of biscuits as Jyoti, but fewer than Abhay." Tanu's mother clarified, "The biscuits weren't specifically counted, so there might be varying amounts. Anyone who wants more can take them."

You're likely familiar with the equal sign ($=$), but do you know about the 'less than' sign ($<$) and the 'greater than' sign ($>$)? So, Madhav could have also said, "I got biscuits equal to Jyoti ($=$) but less than Abhay ($<$)."

Let's Solve

Insert the appropriate sign ($>$, $<$, or $=$) in the blank space

276 175

6738 8764

3980 6532

8463 9765

੬੮੭ ੬੮੭

੬੪੨੨ ੮੮੩੦

Practice Work

1. Write the place value -

- (i) Place value of digit 4 in 3482 (ii) Place value of digit 9 in 7916
(iii) Place value of digit 6 in 6203 (iv) Place value of digit 5 in 5431

2. Insert the appropriate sign (>, <, or =) in the blank space -

- (i) 3849 3948 (ii) 9999 10000
(iii) 7620 7206 (iv) 1245 1245

3. Write the number for the expanded form given below -

- (i) $3,000 + 500 + 20 + 4$ =
(ii) $2,000 + 300 + 60 + 9$ =
(iii) 3 thousands + 2 hundreds + 1 one =
(iv) $6,000 + 50 + 8$ =
(v) 5 thousands + 7 hundreds + 2 tens =
(vi) 2 hundreds + 6 thousands + 5 ones =

4. Write the following numbers in ascending order (smallest to largest)

8765, 9123, 7654, 1098

.....

5. Write the following numbers in descending order (largest to smallest)

5678, 4567, 6790, 3567

.....

6. Think and answer -

- (i) What is the smallest 3-digit number?
(ii) What is the largest 3-digit number?
(iii) What is the smallest 4-digit number?
(iv) What is the largest 4-digit number?

7. Write the following numbers in words -

- (i) 5872 (ii) 9035
(iii) 7610 (iv) 6999
(v) 8241 (vi) 9500
(vii) 5123 (viii) 8888
(ix) 6304 (x) 9999

8. Write the following numbers in digits -

- (i) Seven thousand six hundred ten (ii) Nine thousand nine hundred ninety-nine
(iii) Eight thousand two hundred forty-one (iv) Six thousand three hundred four
(v) Five thousand one hundred twenty-three (vi) Nine thousand five hundred
(vii) Eight thousand eight hundred eighty-eight (viii) Six thousand nine hundred ninety-nine
(ix) Five thousand eight hundred seventy-two (x) Nine thousand thirty-five

9. Which of the following numbers is the largest?

- (a) 5 thousands + 30 hundreds + 4 tens + 6 ones
(b) 4 thousands + 45 hundreds + 5 tens + 9 ones
(c) 6 thousands + 20 hundreds + 8 tens + 3 ones
(d) 5 thousands + 40 hundreds + 3 tens + 2 ones ()

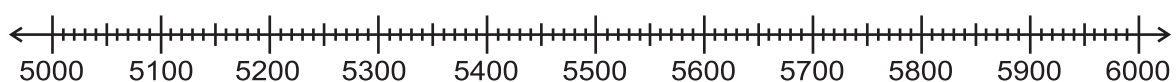
10. PQRS is a four-digit number. If one of its digits is changed to 8, the value of the number increases by 600. Which of the following statements about PQRS is true?

- (a) $Q = 2$ (b) $R = 2$ (c) $Q = 6$ (d) $P = 8$ ()

11. Write the largest and smallest numbers that can be formed using the digits 8, 2, 6, and 5.

12. Show the following numbers on the number line given below -

5020, 5180, 5270, 5340, 5490, 5510, 5690, 5730, 5860, 5950





Let's discuss

Himanshu lives in a small village. He runs a shop where he sells fruits and vegetables. One day, Himanshu bought 115 kilograms of apples and 80 kilograms of bananas from the vegetable market.

- How many total kilograms of fruits does Himanshu have?kilograms
- Is the quantity of bananas or apples more, and by how much?
- Just then, a customer came and bought 15 kilograms of apples and 13 kilograms of bananas. How many total fruits did the customer buy?



- How many kilograms of apples are left with Himanshu now ?
- How many kilograms of bananas are left with Himanshu now ?
- How many kilograms of fruits are left with Himanshu now ?
- The total value of fruits bought by Himanshu is 8273.

What is the place value of each digit in the number 8273 ?

8 2 7 3

Th. H. T. O.

- The place value of digit 8 at the thousands place = 8 thousands = $8 \times 1000 = 8000$
- The place value of the digit at the hundreds place =
- The place value of the digit at the tens place =
- The place value of the digit at the ones place =

- Fill in the table using ones, tens, hundreds, and thousands to identify the numbers.

- | | Thousands | Hundreds | Tens | Ones | Number |
|-----|-----------|----------|------|------|--------|
| i | | | 9 | 4 | 94 |
| ii | | | | | |
| iii | | | | | |
| iv | | | | | |
| v | | | | | |

Comparison of Numbers

5678			
Thousands	Hundreds	Tens	Ones
5	6	7	8



6578			
Thousands	Hundreds	Tens	Ones
6	5	7	8

4562			
Thousands	Hundreds	Tens	Ones



3436			
Thousands	Hundreds	Tens	Ones

- (i) 3190  3910 (ii) 952  1050 (iii) 2008  8002
- (iv) Arrange 8431, 4350, 3692, 9999 in ascending order.
- (v) Arrange 6698, 8003, 2222, 2765 in descending order.

Write the number formed with the help of pictorial encoding

(Hint - Ones = ● Tens = ■ , Hundreds = ■ , Thousands = ★)

S.No.	Symbol	Expanded Form	Number
(i)	■ ■ ★ ★ ● ●	$\underline{2000} + \underline{00} + \underline{20} + \underline{2}$	2022
(ii)	■■ ■ ● ● ●	_____ + _____ + _____ + _____	
(iii)	● ● ● ● ■ ■ ■ ■ ★ ★ ● ● ● ■ ■ ■ ■	_____ + _____ + _____ + _____	
(iv)	● ● ■ ■ ★ ■	_____ + _____ + _____ + _____	
(v)	■ ■ ■ ■ ★ ★	_____ + _____ + _____ + _____	

Fill in the table -

(Hint - Ones = ● Tens = ■ , Hundreds = ■ , Thousands = ★)

S.No.	Symbol	Thousands	Hundreds	Tens	Ones	Number
(i)	★ ★ ● ● ● ● ■	2	0	1	4	2014
(ii)	■■ ■ ● ● ● ★ ★					
(iii)	■■ ■ ● ● ★ ★ ■					
(iv)	■■ ● ● ● ★ ★ ■ ■					
(v)	■■ ■ ● ● ● ★ ■					

Draw the pictorial representation of the expanded form of the given numbers -

Number	Picture
1321	
4050	
3002	

Let's Create Numbers

- Write the largest and smallest numbers using the digits given in the table - (Each digit is to be used only once)

Digits	Largest Number	Smallest Number
6, 9, 4, 3		
1, 1, 6, 0		
3, 8, 6, 1		

- Write the largest and smallest four-digit numbers that can be formed using the digits 5, 1, 7 and 8 without repeating any digits.

	In Digits	Expanded Form	In Words
Largest Number			
Smallest Number			

- Write the place value of each digit of the smallest number -

Digit	Place Value	Place Value in Words

- Write the largest and smallest numbers that can be formed using the digits 6, 3, 0 and 2 (each digit can be used a maximum of two times).

	In Digits	Expanded Form	In Words
Largest Number			
Smallest Number			

- Write the place value of each digit of the largest number -

Digit	Place Value	Place Value in Words

Vijay Kaka and his various methods of calculation

Vijay Kaka, is a shopkeeper in a village, would quickly do calculation for his customers..

His shop was near the primary school. When children came to his shop to buy things, they were surprised that how quickly Kaka would calculate.

One day, Nandini, Ravi, Sarika, and Anmol of class 4 were talking among themselves.



Nandini said, "Yesterday I bought books for ₹275 and notebooks for ₹125. I got stuck in the addition, but Vijay Kaka quickly said it was ₹400."

Ravi said, "Yes! When I bought a bag for ₹860 and returned books worth ₹450, Kaka immediately said it was ₹410."

Anmol then said, "I can't even add that quickly with pen and paper, and sometimes my answers are wrong, yet Vijay Kaka calculates fast and accurately." Everyone said, "Yes, that's true."

Everyone decided to meet Vijay Kaka and ask him about his methods. They all reached the shop and expressed their curiosity.

Vijay Kaka said, "Of course! I will tell you many ways to add."

First Method

- If someone bought an item for ₹275 and then another item for ₹125, I think-
 $275 + 100 = 375$ then $375 + 25 = 400$

Adding in parts makes it easier.

Second Method

- If someone gave ₹860 and needs to get ₹450 back, I think like this -
 $800 - 400 = 400$, then $60 - 50 = 10$,
So $400 + 10 = 410$

Third Method

- If I have to deduct ₹300 from ₹480,

I do $400 - 300 = 100$

Then I add 80 to 100. That is, 180

- **Sometimes I also do it like this -**

First, considering 480 as 500, I subtract 300 from it, which makes it 200.

Then I subtract 20 from the obtained 200 (this is the 20 that was added to 480 to make it 500). So here also the answer is =180

Fourth Method

- If someone asks me for 250 grams of an item -

I first halve the price of 1 kilogram of that item and then halve the obtained price again.

For example: If lentils are ₹180 per kilogram,

To find the price of 250 grams of lentils, I first divided ₹180 by 2, which gave ₹90.

Then I divided ₹90 by 2 again, which gave ₹45. So, the price of 250 grams of lentils = ₹45.

Fifth Method

- My daily expenses (tea, breakfast, rent) are ₹125, and I need to calculate the expense for 7 days, so I calculate it like this.

$$100 \times 7 = 700$$

$$25 \times 7 = 175$$

$$\text{Now } 700 + 175 = 875$$

Sixth Method

- If there are two items - one item costs ₹437 and the other item costs ₹263, then I think like this -

$$437 + 200 = 637$$

$$637 + 60 = 697$$

$$697 + 3 = 700$$

Seventh Method

- If I have to add 235 to 634, I can also add like this.

$$\begin{array}{r} 634 \\ +245 \\ \hline 879 \end{array}$$

$$\begin{array}{r} 600 + 30 + 4 \\ 200 + 40 + 5 \\ \hline 800 + 70 + 9 \end{array}$$

$$\begin{array}{r} 634 \\ +245 \\ \hline 879 \end{array}$$

$$\begin{array}{r} 600 + 30 + 4 \\ 200 + 40 + 5 \\ \hline 800 + 70 + 9 \end{array}$$

The children were happy to learn Kaka's methods and, upon leaving, promised to apply these techniques to their own math problems.

Now it's your turn

Solve using your own methods -

275 + 125 =	860 - 450 =	790 - 610 =
437 + 263 =	480 - 300 =	680 + 495 =
586 + 215 =	734 - 420 =	560 - 275 =
398 + 472 =	920 - 610 =	820 + 645 =



Let's Solve

(i) If 1 kilogram of sugar costs ₹100, what will be the price of 250 grams of sugar?

(ii) If lentils are ₹180 per kilogram, what will be the price of 750 grams of lentils?

(iii) If 1 kilogram of flour costs ₹120, what will be the price of 500 grams of flour?

(iv) $125 \times 7 =$

(v) $135 \times 6 =$

Let's add like this, too

Example-1

Find the sum of the largest and smallest numbers formed by the digits 3, 5, 0, and 6 -

Solution -

Largest number = 6530

Largest number = 6530

Smallest number = 3056

Smallest number = 3056

$$\begin{array}{r} 6530 \\ +3056 \\ \hline 9586 \end{array}$$

$$\begin{array}{r} 6530 \\ +3056 \\ \hline 9586 \end{array}$$

Example-2

At Beneshwar fair, 1870 people came on the first day, 2340 on the second day, and 1905 on the third day. Tell me, how many people visited the fair in total over the three days?

Solution -

People came on the first day = 1 8 7 0

People came on the second day = 2 3 4 0

People came on the third day = + 2 9 0 5

The total people came = 7 1 1 5

People came on the first day = १ ८ ७ ०

People came on the second day = २ ३ ४ ०

People came on the third day = + २ ९ ० ५

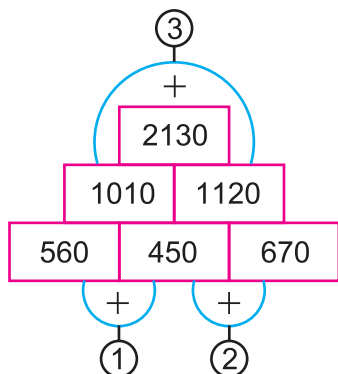
The total people came = ७ १ १ ५

In total, 7115 people visited the fair over the three days.

First, estimate the answer to the given questions, then check and write the correct answer -

	Estimated Answer	Answer obtained by the standard calculation method
438 + 267 =		
892 - 456 =		
765 + 128 =		
950 - 378 =		
523 + 476 =		

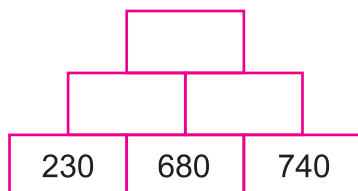
The addition operation is represented below. Understand it and solve other questions, and fill in the blanks -



$$\begin{array}{r} \textcircled{1} \\ 560 \\ + 450 \\ \hline 1010 \end{array}$$

$$\begin{array}{r} \textcircled{2} \\ 450 \\ + 670 \\ \hline 1120 \end{array}$$

$$\begin{array}{r} \textcircled{3} \\ 1010 \\ + 1120 \\ \hline 2130 \end{array}$$



Practice Work

1. Fill in the blanks with the appropriate sign $>$, $<$, or $=$

(i) $345 \dots\dots\dots 543$

(ii) $654 \dots\dots\dots 567$

(iii) $1765 \dots\dots\dots 5800$

(iv) $7654 \dots\dots\dots 7654$

(v) $৩৬৫ \dots\dots\dots ৩৬৫$

(vi) $৬৮৪০ \dots\dots\dots ৩৫৬৭$

2. Write the given numbers in expanded form.

(i) $8764 = \dots\dots\dots$

(ii) $9824 = \dots\dots\dots$

(iii) $6532 = \dots\dots\dots$

3. Add the given numbers.

(i) $2345 + 6789 = \dots\dots\dots$

(ii) $7890 + 1023 = \dots\dots\dots$

(iii) $6543 + 2987 = \dots\dots\dots$

(iv) $১২০৫ + ৮০৭৬ = \dots\dots\dots$

4. Fill in the blanks by adding the correct number

(i) $56 + \dots\dots\dots = 100$

(ii) $78 + \dots\dots\dots = 150$

(iii) $245 + \dots\dots\dots = 500$

(iv) $365 + \dots\dots\dots = 1000$

5. Match who am I -

- | | |
|--|------|
| (i) I am equal to 10 notes of two hundred and 4 notes of one hundred. | 3663 |
| (ii) If two hundred is subtracted from me, I will become the smallest 4-digit number. | 8500 |
| (iii) I am a four-digit number. My ones and thousands digits are the same, and the tens and hundreds digits are double the thousands digits. | 2400 |
| (iv) I am double the smallest 4-digit number. | 1200 |
| (v) I come exactly between 8 thousand and 9 thousand, and my ones and tens digits are zero. | 2000 |

6. Make a 4-digit number-

(i) Find a number whose thousands digit is double the ones digit.

4562

(ii) Find a number where the hundreds and tens places are zero

(iii) Find a number with three places having the digit 4 and one place with zero.

(iv) Find a number whose thousands and hundreds digits are the same, and the tens and ones digits are half of them.

(v) Find a number where each digit is perfectly divisible by 2.

7. Identify the pattern of the numbers given below and write the correct number in the blank space -

(i) 2000,, 2200, 2300,, 2500,,,,, 3100

(ii) 9876,,, 9873, 9872,, 9870,,,, 9865

(iii), 4734, 4834,, 5034,, 5234, 5334,,,, 5734

(iv) 9813, 9803,,,, 9763, 9753,,,, 9713

(v) १८६०,,, ४८६०, ५८६०,,,, ६८६०

8. Reena had ₹2355. Her father gave her ₹4675 more. How many rupees does Reena have in total now?

9. A farmer had 578 mangoes. He bought 324 more mangoes. How many mangoes does he have in total now?

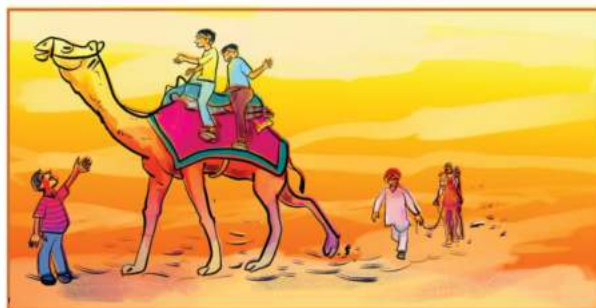
10. A library had 5630 books. 2435 new books were added to it. How many books are there in the library now?

11. A school has 432 boys and 389 girls. How many total students are there in the school?

12. A car traveled 289 kilometers on the first day and 476 kilometers on the second day. How many total kilometers were traveled?



Let's discuss



Five friends—Ravi, Ajay, Gaurav, Vitthal, and Naman—commenced a train journey to Jaisalmer, each carrying ₹6000. The round-trip train ticket cost ₹4500 for everyone. During the trip, they enjoyed themselves with laughter and jokes, capturing many photos, and spent ₹345 on a light snack on the train. Upon arrival, they were captivated by Jaisalmer's golden, dream-like ambience, surrounded by sandy dunes and vibrant Rajasthani culture. They secured a hotel room for ₹5500 before heading out to explore.

The Magic of Forts and Havelis - Their exploration began with Sonar Fort, also known as Jaisalmer Fort. The admission tickets and guide services for this historical site cost for ₹800. As they explored the fort's interior, they felt they were carried back into a fantastical historical period. After this, Patwon Ki Haveli and Salim Singh Ki Haveli were their next stops, and they were captivated by the detailed carvings and historical tales there.

Enjoying the Thar Desert - The next day, they planned to visit the dunes of Sam. They booked a jeep and a camel safari for ₹3450. The experience of riding camels across the dunes was like a scene from a film. With the arrival of evening, a program featuring folk music and Kalbelia dance began, which they enjoyed to the fullest.

Wonderful food and shopping - A trip felt incomplete without tasting the wonderful Rajasthani Thali. They enjoyed a memorable meal of Dal-Baati Churma, Gatte ki Sabzi, and Kachori at a fantastic Dhaba, spending ₹1680. After that, they bought toys, bangles, and clothes from the market, which cost ₹9500.

After this exciting three-day trip, they caught their return train. With some money left, they had tea and snacks for ₹470 before reaching home. They will never forget this trip to Jaisalmer.

- (i) What is the highest amount spent?
.....
- (ii) How much did they spend in total on tea, snacks, and food?
.....
- (iii) What is the difference amount between the cost of train tickets and the hotel?
.....
- (iv) What is the lowest amount spent?
.....
- (v) How much was spent on toys, bangles, and clothes?
.....

Number Identification

A notice board was placed at a public water dispenser. Water dispenser construction year - 2024

- Construction 2024
- Total sanctioned amount - 9800 rupees
- Total expenditure - 8999 rupees

Bhumika and Bheem discuss after looking at the notice board.

Bhumika - Bheem, what is the place value of the digit 2 in the construction year of this water dispenser?

Bheem - It has 20 and 24, so the place value of the digit 2 is tens.

Bhumika - No Bheem, look at it this way -



Thousands	Hundreds	Tens	Ones
2	0	2	4

Here, the digit 2 is in two places: tens and thousands, so the place values of 2 are 20 and 2000. Similarly, the sanctioned amount and expenditure for water dispenser construction are written below in digits and words -

Thousands	Hundreds	Tens	Ones
9	8	0	0
Nine thousand	Eight hundred		
8	9	9	9
Eight thousand	Nine hundred	Ninety-nine	

Comparison of Numbers -

In a rural sports competition, 1030 people were present on the first day, 1300 people on the second day, and 1003 people on the third day.

Can you tell which day had the most attendees?

Let's understand this with the help of place value -

	Thousands	Hundreds	Tens	Ones
First day	1	0	3	0
Second day	1	3	0	0
Third day	1	0	0	3

We know that to compare numbers, we start comparing from the largest place value.

Here, all digits in the thousands place are the same.

Therefore, we compare the digits in the hundreds place, which shows that the most people were present on the second day.

Now, find out on which day the fewest people were present?

Examples of Subtraction Operations

(i) $500 - 292 = 208$

	H.	T.	O.
4	9	10	
5	8	8	
2	9	2	
2	0	8	

(ii) $9765 - 876 = 8889$

	Th.	H.	T.	O.
8	16	15	15	
9	7	6	5	
	8	7	6	
8	8	8	9	

(iii) $4965 - 406 = 4559$

	Th.	H.	T.	O.
4	9	6	5	
4	0	6	5	
	4	9	5	
4	5	5	9	

- (iii) The total population of Chahuwali village is 6382, out of which 2612 are males, 2503 are females, and the rest are children. Find the number of children -

$$\begin{array}{r}
 \text{Number of males} \quad \quad \quad = \quad \overset{\textcircled{1}}{2} \ 6 \ 1 \ 2 \\
 \text{Number of females} \quad \quad \quad = \quad + \ 2 \ 5 \ 0 \ 3 \\
 \hline
 \text{Total number of males and females} = \quad 5 \ 1 \ 1 \ 5 \\
 \hline
 \\
 \text{Total population of the village} \quad = \quad 6 \ 3 \overset{7}{\cancel{8}} \overset{12}{\cancel{2}} \\
 \text{Number of males and females} \quad = \quad - \ 5 \ 1 \ 1 \ 5 \\
 \hline
 \text{Number of children} \quad \quad \quad = \quad 1 \ 2 \ 6 \ 7 \\
 \hline
 \end{array}$$

Therefore, the number of children in the village is 1267.

Subtracting 0 from any number gives the same number as the remainder.

For example: $715 - 0 = 715$

Subtracting the same number from a number results in 0 (zero) as the remainder.

For example: $613 - 613 = 0$

Subtracting 1 from any number gives the number just before that number as the difference. For example: $72 - 1 = 71$, which comes just before 72.

The operation of subtraction is the inverse of addition. For example: $7+9=16$, hence $16-7=9$, $16-9=7$.

When subtracting, if you add the subtracted number to the remainder, the sum will be the original number from which it was subtracted.

This allows us to check our answer. $612 - 32 = 580$, $580 + 32 = 612$.



Let's solve

(i)

$$\begin{array}{r}
 5 \ 2 \ 1 \ 7 \\
 - 1 \ 9 \ 2 \ 4 \\
 \hline
 \\
 \hline
 \end{array}$$

(iv)

$$\begin{array}{r}
 6 \ 5 \ 8 \ 6 \\
 - \quad \quad \quad \\
 \hline
 6 \ 3 \ 2 \ 1 \\
 \hline
 \end{array}$$

(ii)

$$\begin{array}{r}
 4 \ 8 \ 8 \ 4 \\
 - 2 \ 9 \ 0 \ 4 \\
 \hline
 \\
 \hline
 \end{array}$$

(v)

$$\begin{array}{r}
 5 \ _ \ 9 \ 5 \\
 - 4 \ 1 \ _ \ 4 \\
 \hline
 1 \ 5 \ 6 \ _ \\
 \hline
 \end{array}$$

(iii)

$$\begin{array}{r}
 5 \ 6 \ 3 \ 8 \\
 - 3 \ 2 \ 1 \ 4 \\
 \hline
 \\
 \hline
 \end{array}$$

(vi)

$$\begin{array}{r}
 _ \ 4 \ 6 \ 7 \\
 - 2 \ 0 \ 3 \ _ \\
 \hline
 7 \ 4 \ 2 \ 8 \\
 \hline
 \end{array}$$

Practice Work

1. Match section 'A' with section 'B' -

Section 'A'

$1713 + 589$

$987 + 6528 + 31$

$5000 - 319$

$7873 - 999$

Section 'B'

Seven thousand five hundred forty-six

Six thousand eight hundred seventy-four

Thousand three hundred two

Four thousand six hundred eighty-one

2. Identify True/False statements -

(I) Subtracting zero from a number gives the same number. (True/False)

(ii) Adding one to a number gives the same number. (True/False)

(iii) Subtracting the largest three-digit number from the largest four-digit number results in a remainder of 100. (True/False)

(iv) $7632 + 806 + 9002 = 9002 + 806 + 7632$ (True/False)

(v) $5832 - 5690 = 5690 - 5032$ (True/False)

3. Using digits 3, 0, 4, and 2. Write any five numbers -

.....

4. Mark the largest number with a square and the smallest number with a circle from the given numbers -

(i) 3564 2345 6534 2763

(ii) 356 278 1462 760

(iii) 9870 8754 5479 7850

(iv) 8456 3742 9800 6549

(v) 8763 3084 2675 7430

5. Write the expanded form in numbers -

(i) $500 + 40 + 3 = \dots\dots\dots$

(ii) 5 thousands + 4 hundreds + 2 tens + 1 unit =

(iii) $4000 + 600 + 50 + 8 = \dots\dots\dots$

6. Add -

$3542 + 2176 =$

$4785 + 1324 =$

$6103 + 2885 =$

$୭୩୨୪ + ୧୬୫୦ =$

$4567 + 3890 =$

$2456 + 3241 =$

$1902 + 4086 =$

$5230 + 1478 =$

$3091 + 2908 =$

7. Subtract -

$6890 - 2457 =$

$9050 - 3816 =$

$7999 - 4678 =$

$9842 - 4293 =$

$9000 - 5784 =$

$7532 - 3184 =$

$୮୨୩୪ - ୨୯୬୫ =$

$6050 - 2397 =$

$7495 - 4521 =$

8. Solve -

- (i) A farmer produced 1325 kg of wheat and 2450 kg of millet from his field. What was the total amount of grain combined?
- (ii) 2875 saplings were planted in a block of Churu in one year. The next year, 3125 more saplings were planted. How many saplings were planted in total over both years?
- (iii) A school bought chairs for 3500 rupees and tables for 2450 rupees. If the school had a total of 7500 rupees, how many rupees are left now?
- (iv) A student received a scholarship of 5000 rupees. He spent 2150 rupees on books and 1350 rupees on a bag. How many rupees does he have left now?
- (v) A farmer from the Tonk district sold mustard in the market and earned 6820 rupees from it. After coming home, he spent 1520 rupees on fertilizer and 1250 rupees on seeds. How many rupees does he have left now?
- (vi) In a government warehouse in Barmer district, 2650 kg of rice and 1845 kg of flour were stored. What is the total quantity of grain stored?
- (vii) A government hospital in Banswara district had 4680 medicines. On the first day, 1725 medicines were distributed, and on the second day, 1095 more medicines were distributed. How many medicines are left in the hospital now?
- (viii) A truck departed from Jodhpur with 4250 bricks. On the way, 1575 bricks were unloaded in a village. How many bricks are left?
- (ix) A school in Jhalawar district had 3250 books. Out of them, 1485 books were given to children for reading. How many books are left in the library now?



Let's discuss

Guddu and Shalini's mother gave them sweet boxes.



They gave Guddu one such box -



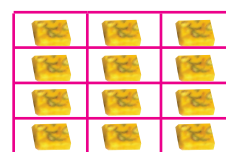
$$4 \times 8$$

This box has 4 rows and here are 8 barfis in each row.

Shalini was given 2 such boxes -



$$4 \times 5$$



$$4 \times 3$$

One box has 4 rows of 5 barfis, and the other has 4 rows of 3 barfis.



Mom gave Shalini two barfi boxes, while I only got one. Why did she give me less?



Oh! Guddu, Mom gave us both an equal number of barfis

Did they really get an equal number of barfis?

Do I have to count all the barfis?

Guddu: Yes, show me the box. I'll figure it out by multiplying.

In Guddu's box:

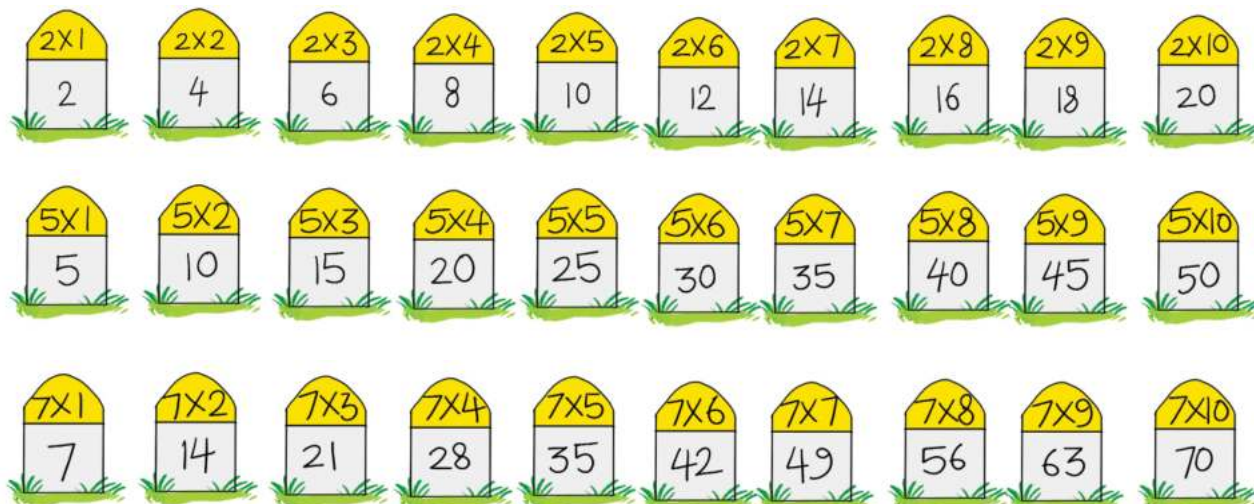
$$4 \text{ barfis } 8 \text{ times} = 4 \times 8 = 32$$

In Shalini's boxes :

- 4 barfis 5 times = $4 \times 5 = 20$ and 4 barfis 3 times = $4 \times 3 = 12$
- So, total barfis Shalini got = $20 + 12 =$
- Is Shalini right? Discuss with your friends too.

In the previous class, we learnt to make tables of 2 and 5 using sticks. Let's learn the table of 7.

Shalini: What is this? I can also make the table of 7 by adding the numbers from the tables of 2 and 5.



Your turn to try -

$2 \times 1 = 2$	$3 \times 2 = 6$	$6 \times 4 = 24$	$2 \times 5 = 10$	$4 \times 2 = 8$
$5 \times 1 = 5$	$5 \times 2 = 10$	$4 \times 4 = 16$	$7 \times 5 = 35$	$3 \times 2 = 6$
$7 \times 1 = 7$	$8 \times 2 = \dots\dots\dots$	$10 \times 4 = \dots\dots\dots$	$9 \times 5 = \dots\dots\dots$	$7 \times 2 = \dots\dots\dots$

How to make a table of 12?

Guddu, I know the table of 2.

Shalini: I know the table of 10.

We can make the table of 12 from these because adding 2 and 10 gives 12.

Table of 2	2	4	6	8	10	12	14	16	18	20
Table of 10	10	20	30	40	50	60	70	80	90	100
Table of 12	12	24	36	48	60	.....	.....	.....	.....	.....

You also create the table of 15 -

Table of 5	5	10	15	.....	.....	.....	.....	.....	.....	.....
Table of 10	10	20	30	.....	.....	.....	.....	.....	.....	.....
Table of 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Some special patterns

$$4 \times 8 = 32$$

$$8 \times 4 = 32$$

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Fill in by looking at the table -

$3 \times 7 = 21$	$3 \times 9 = 27$	$2 \times 8 = 16$	$5 \times 8 = 40$	$7 \times 9 = 63$
$7 \times 3 = 21$	$9 \times 3 = \dots\dots$	$8 \times 2 = \dots\dots\dots$	$8 \times 5 = \dots\dots\dots$	$9 \times 7 = \dots\dots\dots$

$8 \times 7 =$

$9 \times 6 =$

$5 \times 8 =$

$3 \times 9 =$

$9 \times 3 =$

$2 \times 5 =$

Try -

$5 \times 1 = 5$

$5 \times 10 = 50$

$5 \times 100 = \dots\dots\dots$

$5 \times 1000 = \dots\dots\dots$

$3 \times 1 = 3$	$5 \times 3 = 15$	$6 \times 4 = 24$	$5 \times 8 = 40$	$7 \times 9 = 63$
$3 \times 10 = 30$	$5 \times 30 = 150$	$6 \times 40 = \dots\dots\dots$	$5 \times 80 = \dots\dots\dots$	$7 \times 90 = \dots\dots\dots$

Shalini: This is easy. I know that If it became 30 from 3, then 15 will become 150. Nandu's fruit shop $5 \times 3 = 15$, and we need to find 5×30 . When 3 became 30, Think, why is it so ?

Nandu's fruit shop

Nandu has a banana shop. He is selling a dozen bananas for 50 rupees.

Reena bought three dozen bananas from Nandu's shop. How many rupees will Reena pay Nandu?

1 dozen bananas cost 50 rupees, so 3 dozen will cost?

$50 \times 3 = \dots\dots\dots$



We have learnt this.

We know, $5 \times 3 = 15$

So, $50 \times 3 = 150$

$$\begin{array}{r} 50 \\ \times 3 \\ \hline 150 \end{array}$$

- 1 dozen has 12 bananas. How many bananas would Reena get ?

1 dozen bananas = 12 bananas,

so in 3 dozen there will be - $3 \times 12 = \dots\dots\dots$ or

$$\begin{array}{r} 12 \\ \times 3 \\ \hline \end{array}$$

Reena knows that she can make the table of 12 from the tables of 10 and 2 -

$$10 \times 3 = 30$$

$$2 \times 3 = 6$$

$$12 \times 3 = \underline{36}$$

$\times$	10	2
3	30	6

$$\begin{array}{r} 12 \\ \times 3 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 12 \\ \times 3 \\ \hline 36 \end{array}$$

- Radha bought 13 dozen bananas. How many bananas will Radha get in total?

I have to multiply 12 by 13

$12 \times 13 = \dots\dots\dots$ bananas

$12 = 10 + 2$ and $13 = 10 + 3$

$\times$	10	2
10	100	20
3	30	6

How many bananas?

$$100 + 20 + 30 + 6 = 156$$

How many rupees worth of bananas did Radha buy?

For this, 13 has to be multiplied by 50.

$13 \times 50 = \dots\dots\dots$ Rupees

Examples of multiplication operations -

(i) $7 \times 9 = 63$

$$\begin{array}{r} 7 \\ \times 9 \\ \hline 63 \end{array}$$

Multiplicand = 7
Multiplier = 9
Product = 63

(ii) $80 \times 7 = 560$

$$\begin{array}{r} 80 \\ \times 7 \\ \hline 560 \end{array}$$

(iii) 3×26

$$\begin{aligned} &= 3 \times (20 + 6) \\ &= (3 \times 20) + (3 \times 6) \\ &= 60 + 18 \\ &= 78 \end{aligned}$$

Extend the tables in the table

Table of 9	Table of 11	Table of 8	Table of 12	Table of 13	Table of 15
$9 \times 1 = 9$	11	8	12	13	15
$9 \times 2 = 18$	22	–	24	–	30
$9 \times 3 = 27$	–	24	–	39	–
–	44	–	48	–	60
$9 \times 5 = 45$	55	40	–	65	–
$9 \times 6 = 54$	–	48	72	–	90
–	77	–	84	91	–
$9 \times 8 = 72$	–	64	–	–	120
–	99	72	–	117	–
$9 \times 10 = 90$	110	–	120	–	150

Can it be solved like this, too ?

- (i) $3 \times 50 = 3 \times 5 \times 10 = 15 \times 10 = 150$
- (ii) $4 \times 40 = \dots\dots\dots$
- (iii) $6 \times 90 = \dots\dots\dots$
- (iv) $5 \times 70 = \dots\dots\dots$

Do you know?

Multiplying a number by 1, 2, 3, 4,....., the products obtained are called multiples of that number.

Multiples of 7 = 7, 14, 21, 28, 35,

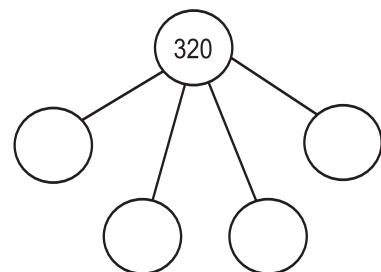
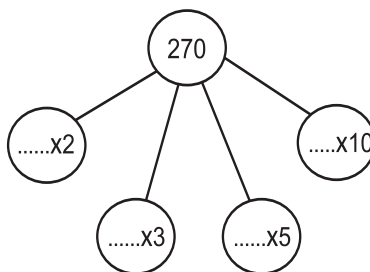
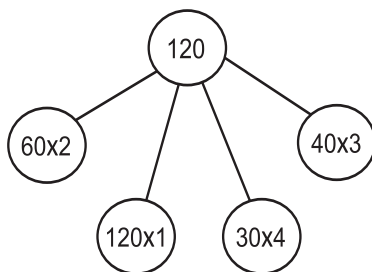
$7 \times 1 = 7$
$7 \times 2 = 14$
$7 \times 3 = 21$
.....
.....



Let's try

- (i) 4×31
- (ii) 7×93
- (iii) 5×45
- (iv) 8×52
- (v) 2×64
- (vi) 6×28

Look at the example and write the missing numbers.



Practice Work

1. Solve -

- (i) $7 \times 20 =$ $7 \times 2 \times 10 = 14 \times 10 = 140$
- (ii) $6 \times 50 =$
- (iii) $9 \times 60 =$
- (iv) $8 \times 90 =$
- (v) $5 \times 90 =$

2. Match column 'A' with column 'B' -

Column A

26×0

18×1

9×16

15×15

18×10

Column B

18

0

180

225

144

3. Solve -

$$\begin{array}{r} 4 \ 5 \\ \times \ 6 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 7 \ 1 \\ \times \ 8 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3 \ 5 \\ \times \ 4 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 5 \ 0 \\ \times \ 7 \\ \hline \\ \hline \end{array}$$

4. Prices of some items are written below -

				
₹. 30	₹. 40	₹. 75	₹. 80	₹. 60

Answer - Price of 5 locks = Price of 2 jugs = Price of 3 books =

5. Rahul has 6 marbles. Tanmay has double marbles than Rahul. How many marbles do they both have in total?
6. Rama has made 8 flowerbeds in the home garden. She has planted 4 saplings in each flowerbed. How many number of saplings are planted?
7. A person makes 13 pots daily. How many pots will he make in a week?

We learnt and understood - 1



1. The group of numbers immediately before and after 6779 is.

(अ) 6778, 6770

(ब) 6778, 6780

(स) 6769, 6770

(द) 6769, 6780

()

2. The number form of the expanded form 3 tens + 8 thousands + 5 hundreds is.

(अ) 385

(ब) 583

(स) 8503

(द) 8530

()

3. In which of the following numbers is the place value of the digit 3 equal to 300?

(अ) 9832

(ब) 8563

(स) 6398

(द) 3982

()

4. The expanded form of five thousand two hundred two is -

(अ) $5000 + 200 + 20$

(ब) $5000 + 20 + 2$

(स) $5000 + 2 + 200$

(द) $5000 + 500 + 2$

()

5. Write the following numbers in digits -

(i) Nine thousand five hundred thirteen = (ii) Four thousand three =

6. Write the following numbers in words -

(i) 1675 =

(ii) 2089 =

7. Insert the appropriate sign $>$, $=$, or $<$ in the box between the given numbers -

(i) 2660 2650

(ii) 8077 8077

(iii) 4377 4367

(iv) 6999 7000

8. Solve -

(i)

$$\begin{array}{r} 22 \square 8 \\ + \square \square 80 \\ \hline 763\square \end{array}$$

(ii)

$$\begin{array}{r} \square \square 77 \\ + 80 \square \square \\ \hline 8841 \end{array}$$

(iii)

$$\begin{array}{r} 3\square 1 \\ - \square 66 \\ \hline \square 1\square \end{array}$$

(iv)

$$\begin{array}{r} 577 \\ - \square \square \\ \hline \square 90 \end{array}$$

9. Mayank has 9887 rupees in his account. He withdrew 2986 rupees from it. How many rupees are left in Mayank's account now ?
10. Ramu sold 1500 lamps on the first day of Diwali and 1250 lamps on the second day. If he had 5000 lamps initially, then how many lamps are left with him now?
11. Form a number from the expanded form 1 thousand + 9 tens + 4 units + 2 hundreds and subtract 1068 from it.
12. If the price of one umbrella is Rs. 45, what will be the price of four umbrellas?
13. Amit has double amount of rupees than Piyush. If Piyush has 600 rupees, how many rupees does Amit have?
14. One hour has 60 minutes, so how many minutes will be there in 9 hours?
15. What will be the product of the place values of digits 6 and 5 in the number 4865?
16. The prices of some items are given below.

Price List					
Book	-	Rs. 35.00	Drawing Book	-	Rs. 45.00
Football	-	Rs. 70.00	Ball	-	Rs. 25.00
Umbrella	-	Rs. 70.00	Scale	-	Rs. 20.00

If you buy the items given below, how much will you have to pay?

3 Books.....Rupees 4 Footballs.....Rupees 10 Umbrellas..... Rupees
 5 Drawing Books.....Rupees 10 Balls.....Rupees 10 Scales.....Rupees

17. Your school has 1500 students. The number of students in different houses are as follows -

Shivaji Sadan = 400 Swami Vivekananda Sadan = 500

Atal Sadan = 350 Bhagat Singh Sadan = ?

Find the number of students in Bhagat Singh Sadan.

18. Fill in the blank -

$$135 + 48 + \dots = 534 - 123 + 42$$



Let's discuss

Seema and Monu's mother gave them a Ghevar. "You both share the Ghevar equally."



"Here, I've cut it into half."



Mom, look, she's giving me this small piece and says they're equal. Are these two pieces equal?

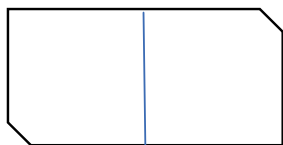
Monu showed both pieces by placing them one on top of the other. "How will you distribute the Ghevar equally between the two?" Mother - Seema! "Here is your half Ghevar, how much Ghevar did Monu get?"



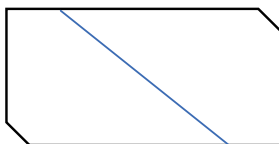
Monu then cuts her Ghevar piece into two equal pieces and gives one piece to her mother. "Here's half of half," said Monu. Mother smiled and said - Half of half is a quarter. If a Ghevar is divided into 4 equal parts, each part is a quarter.

Division of land

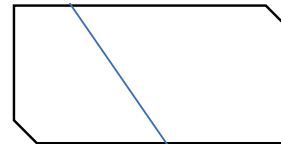
A farmer wants to divide his land between his two children. How many ways can you divide the land?



Mahesh divided it this way



Shanti divided it this way



Usha divided it this way



Let's solve

- Have all three divided the land equally? Yes/No
- Discuss with your friends and tell who divided it equally? How did you know?.....
- How much land each of the farmer's two children will get?



Let's discuss

- Take a rectangular piece of paper. Fold the paper into two halves.

Colour one half -



How many coloured sections does the rectangular paper have? =

How many total parts are there in the rectangular paper? =

The way to write half in numbers is = $\frac{1}{2}$

The way to read it is= one half.

And it means - one out of two equal parts

- Take a rectangular piece of paper and colour one-fourth of it.



How many coloured parts are on the rectangular paper? =

What is the total number of parts in the rectangular paper? =

One-fourth is written = $\frac{1}{4}$ and it is read as - one-fourth

One-fourth means one out of four equal parts.

- Divide the shape into four equal parts.



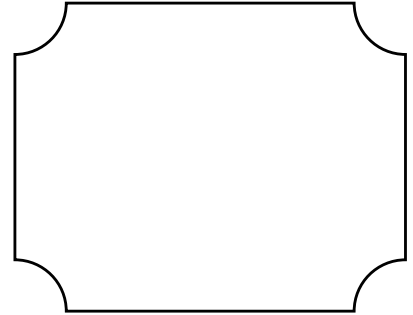
Let's try

How many ways can you divide it into four equal parts?

Divide it with your friends.

How much is each part?

(One fourth/Half/Three fourths)



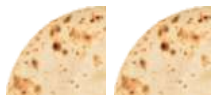
Explain by understanding



1 Chapati



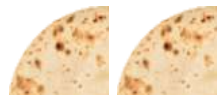
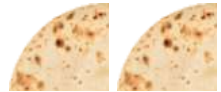
$\frac{1}{4}$ Chapati



$\frac{2}{4}$ Chapati

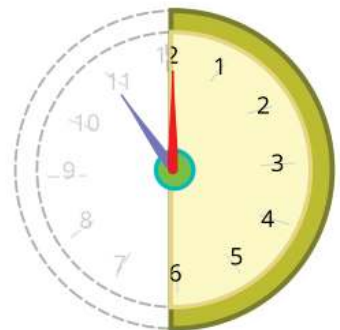
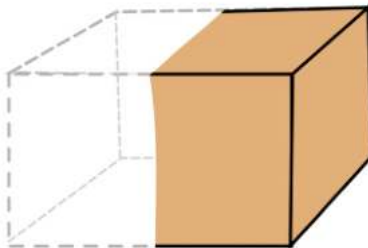
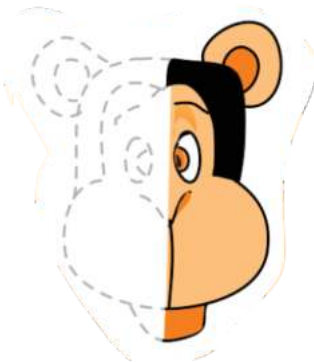
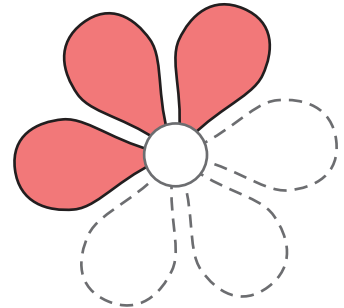


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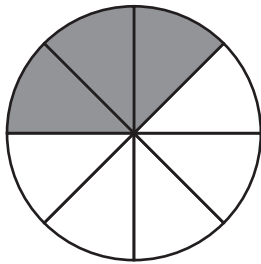


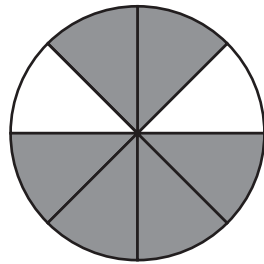
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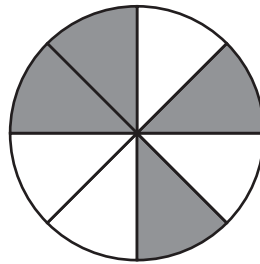
- Here, half ($\frac{1}{2}$) of the picture is given. Complete the picture by drawing and coloring the remaining half.

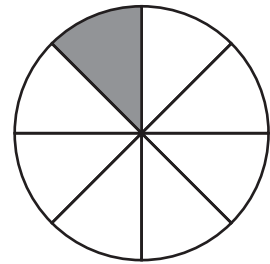


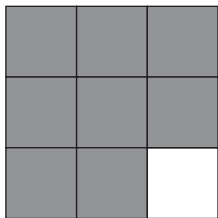
Write the fraction for the shaded part

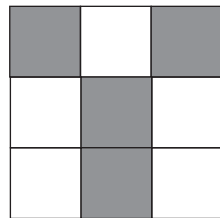


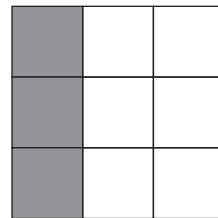


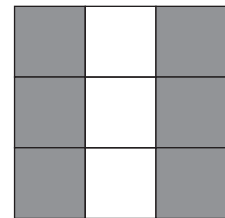


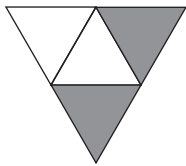




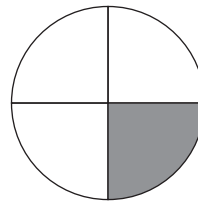






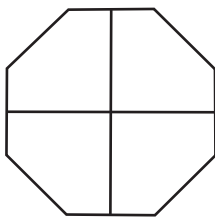




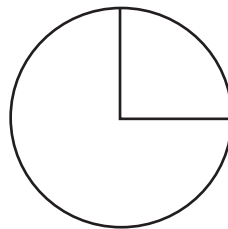




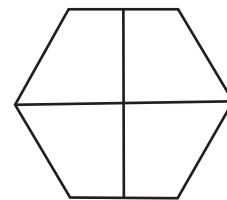
Shade the figures according to the given fractions.



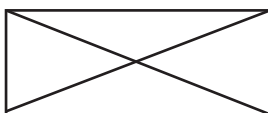
$$\frac{1}{2}$$



$$\frac{3}{4}$$



$$\frac{3}{4}$$



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

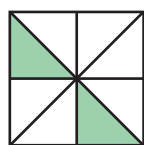


$$\frac{1}{2}$$



$$\frac{3}{4}$$

Let's discuss some more fractions



Coloured parts in the picture, i.e., the numerator = 2

Total parts in the picture, i.e., the denominator = 8

So the number, i.e., the fraction, will be = $\frac{2}{8}$



Coloured parts in the picture, i.e., the numerator =

Total parts in the picture, i.e., the denominator =

So the number, i.e., the fraction, will be =

Similarly, the colored part is called 'numerator' and the total parts are called 'denominator'.



Coloured parts in the picture, i.e., the numerator =

Total parts in the picture, i.e., the denominator =

So the number, i.e., the fraction, will be =



Coloured parts in the picture, i.e., the numerator =

Total parts in the picture, i.e., the denominator =

So the number, i.e., the fraction, will be =



Coloured parts in the picture, i.e., the numerator =

Total parts in the picture, i.e., the denominator =

So the number, i.e., the fraction, will be =



Coloured parts in the picture, i.e., the numerator =

Total parts in the picture, i.e., the denominator =

So the number, i.e., the fraction, will be =



Let's try

Total Equal Parts	Shaded Part	Fraction	Numerator	Denominator
4	1	$\frac{1}{4}$	1	4
12	3	.....	.....	.....
8	5	.....	.....	.....
.....	.....	$\frac{3}{5}$	.....	.....

Write the following in fractional form -

(i) 3 out of 4 =

$\frac{3}{4}$

(ii) 7 out of 10 =

.....

.....

(iii) 5 out of 7 =

.....

.....

(iv) 13 out of 11 =

.....

.....

(v) To distribute 7 chocolates among 9 children =

.....

=====

.....

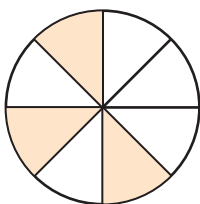
(vi) To distribute 12 books among 4 students =

.....

=====

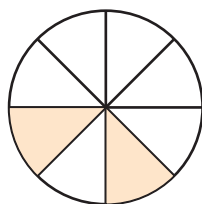
.....

Which fraction is smaller? Which fraction is larger?



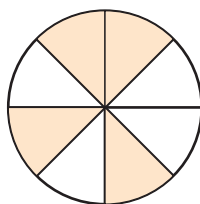
$\frac{3}{8}$

(i)



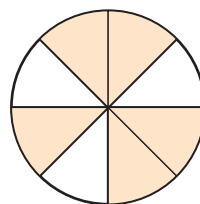
$\frac{2}{8}$

(ii)



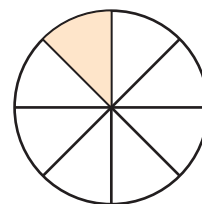
$\frac{4}{8}$

(iii)



$\frac{5}{8}$

(iv)



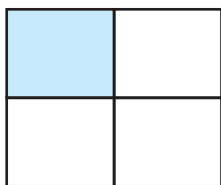
$\frac{1}{8}$

(v)

Which picture has the least shaded part, and its fraction is = $\frac{1}{8}$

Which picture has the most shaded part, and its fraction is = $\frac{5}{8}$

The fraction with the least shaded part is the smallest and the fraction with the most shaded part is the largest.



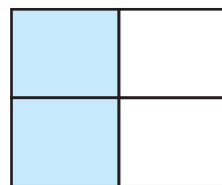
$\frac{1}{4}$

(i)



$\frac{3}{4}$

(ii)



$\frac{2}{4}$

(iii)



$\frac{4}{4}$

(iv)

Which fraction is the largest = $\frac{4}{4}$

Which fraction is the smallest = $\frac{1}{4}$

The order from smallest to largest fraction is as follows -

$\frac{1}{4}$

$\frac{2}{4}$

$\frac{3}{4}$

$\frac{4}{4}$

Among fractions with the same denominator, the fraction with the larger numerator will be the larger fraction.

Example -

Write the fractions $\frac{2}{7}$, $\frac{6}{7}$, $\frac{3}{7}$, $\frac{5}{7}$, $\frac{4}{7}$ in descending order.

Solution:- $\frac{6}{7}$, $\frac{5}{7}$, $\frac{4}{7}$, $\frac{3}{7}$, $\frac{2}{7}$

Let's solve

Circle (○) the largest fraction from the given fractions -

(i) $\frac{3}{2}$, $\frac{1}{2}$, $\frac{5}{2}$

(ii) $\frac{4}{3}$, $\frac{2}{3}$, $\frac{1}{3}$

(iii) $\frac{5}{7}$, $\frac{2}{7}$, $\frac{6}{7}$

(iv) $\frac{4}{8}$, $\frac{5}{8}$, $\frac{3}{8}$

Write the given fractions in descending order -

(i) $\frac{3}{5}$, $\frac{1}{5}$, $\frac{4}{5}$,,

(ii) $\frac{4}{7}$, $\frac{3}{7}$, $\frac{6}{7}$,,

Write the given fractions in ascending order -

(i) $\frac{1}{5}$, $\frac{5}{5}$, $\frac{3}{5}$,,

(ii) $\frac{3}{4}$, $\frac{1}{4}$, $\frac{2}{4}$,,



Let's discuss

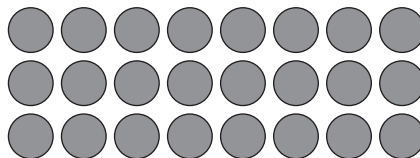
First - I have 24 marbles.

Second - Give me half the marbles. I'll return them later.

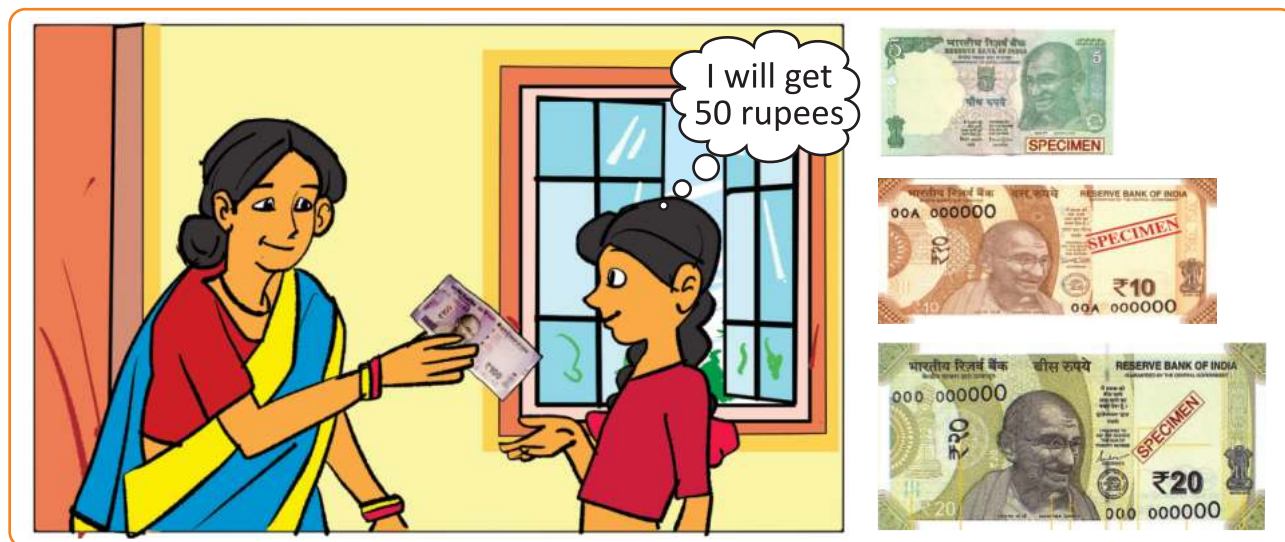
A third child standing by: How many marbles will be half of 24 marbles?

Circle half the marbles.

Half the marbles =



Nannu's aunt gave her 100 rupees and said, "You and Kuku divide the money equally."



Divide 100 rupees in different ways

(i) $\frac{1}{2}$ of 100 =  +  + 

(ii) $\frac{1}{4}$ of 100 =

(iii) $\frac{3}{4}$ of 100 =

Let's understand zero

Aryabhata, the great Indian mathematician, was born in 476 AD. He was active in mathematics and astronomy in the 5th century. He conducted many important research studies.

Aryabhata was the first to use the idea of 'zero' as a **placeholder**, which made it possible to write large numbers, such as 10, 100, 205, etc. He taught us that if a number doesn't have a digit in a certain spot, we use zero to show that empty spot. For example, in 105, "0" shows that there is nothing in the tens place.

Aryabhata's discovery made counting, multiplication, and division in mathematics much easier. His discovery is still useful today, and it can be said that this discovery holds great importance in the development of mathematics.

Zero is used in two ways -

As a **placeholder** and as a **number**.

Zero as a number -

We know that zero is a number.

For example -

- $5 - 5 = 0$ (Here, the situation of having nothing is represented by the number zero '0')
- If there were 3 apples in a basket and all the apples were eaten, now there are 0 (zero) apples in the basket.
- If a child buys 2 candies for 2 rupees and he only has 2 rupees, after buying, he is left with 0 (zero) rupees.

Zero as a place holder

When we write the number 10, '1' means one ten and '0' shows that there is nothing in the unit place.

If there were no zeros, 10 would be considered only 1, which would change the meaning.

For example -

- In 10, zero shows that there is nothing or zero in the unit place.
- In 100, two zeros indicate that it is one hundred, not just one. There is 1 in the hundreds place and nothing or zero in the unit and tens place

Hundreds	Tens	Ones
1	0	0

- In 205, '0' shows that there is nothing in the tens place, but there is 5 in the units place.
- In 1804, '0' shows that there is 1 in the thousands place. There is no number between the hundreds and units places.

Practice Work

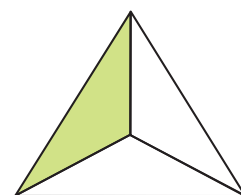
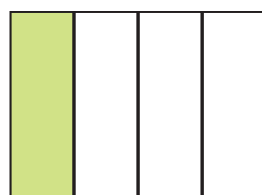
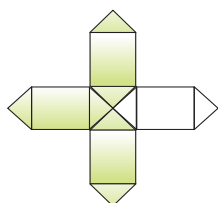
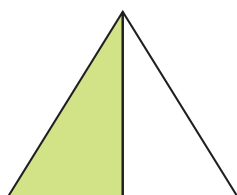
1. In which place is zero in the numbers? Write -

(i) 1025

(ii) 3064

(iii) 4090

(iv) 8001



.....

.....

.....

.....

3. Represent the given fractions by the shaded part in the picture -

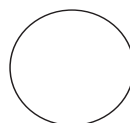
(i) $\frac{1}{5}$



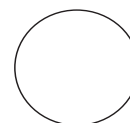
(ii) $\frac{2}{3}$



(iii) $\frac{1}{4}$



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

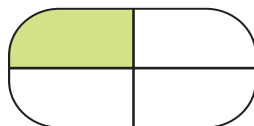


4. Match the shaded parts representing equivalent fractions

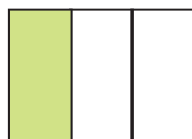
(i)



(ii)



(iii)

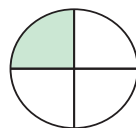
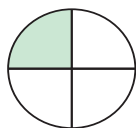


(iv)

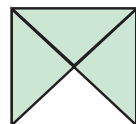
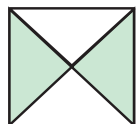


5. Write the fraction for the shaded part in the given pictures, and put the appropriate sign (<, >, =) between them.

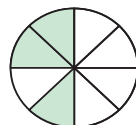
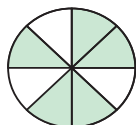
(i)



(ii)



(iii)



6. Mark <, >, or = at the appropriate place -

$$\frac{3}{8} \quad \boxed{} \quad \frac{1}{4}$$

$$\frac{4}{8} \quad \boxed{} \quad \frac{4}{8}$$

$$\frac{1}{2} \quad \boxed{} \quad \frac{3}{4}$$

$$\frac{7}{8} \quad \boxed{} \quad \frac{7}{8}$$

$$\frac{5}{8} \quad \boxed{} \quad \frac{3}{4}$$

$$\frac{1}{2} \quad \boxed{} \quad \frac{1}{2}$$

$$\frac{1}{4} \quad \boxed{} \quad \frac{1}{8}$$

$$\frac{1}{4} \quad \boxed{} \quad \frac{1}{4}$$

7. Tick (✓) the smallest fraction among the given fractions -

(i) $\frac{5}{9}$, $\frac{7}{9}$, $\frac{9}{9}$

(ii) $\frac{4}{11}$, $\frac{9}{11}$, $\frac{2}{11}$

(iii) $\frac{1}{5}$, $\frac{7}{5}$, $\frac{5}{5}$

(iv) $\frac{3}{10}$, $\frac{5}{10}$, $\frac{7}{10}$

8. Write the given fractions in ascending order -

(i) $\frac{1}{7}$, $\frac{5}{7}$, $\frac{3}{7}$, ,

(ii) $\frac{3}{5}$, $\frac{1}{5}$, $\frac{2}{5}$, ,



Let's discuss

There are 6 cars in the car parking. Namita noticed that each car has 4 wheels. She wondered how many wheels there would be in total?

Number of wheels in one car = wheels

Number of wheels in 6 cars = $6 \times 4 = \dots$ wheels



Sonu - (Looking at the soaps) There are 8 soaps in length and 5 soaps in width.

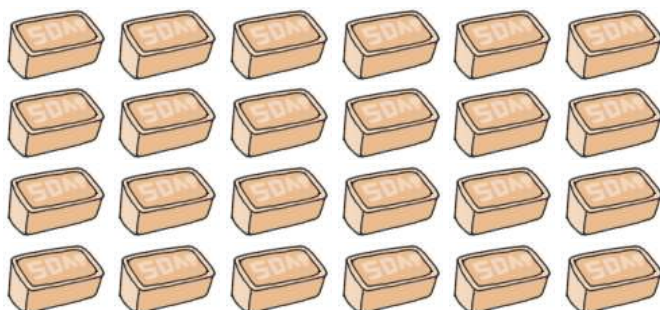
Total soaps = $\times$

The shopkeeper arranged the soaps in 8×5 rectangle.



6

4



Reena arranged 24 soaps like this-
6 soaps in a row, 4 times.

So $6 + 6 + 6 + 6 = 4 \times 6 = 24$

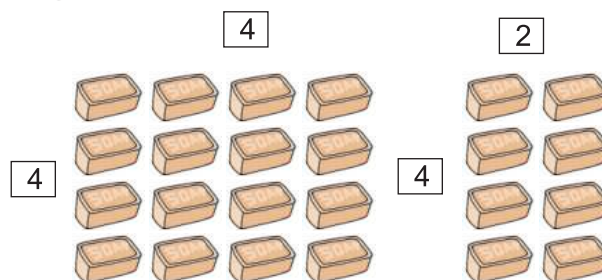
Ashish said - Oh! $4+2$ is also 6. This can be arranged in two sections like this.

Ashish arranged -

Soaps in the first section = 4×4

Soaps in the second section = $\times$

Total soaps in both sections = +



- Mayank, along with his classmate, made a 10×12 rectangle in a grid notebook. Mayank said, 12 is also $10 + 2$. Look at the rectangles below and fill in the blanks

Boxes in the yellow figure =

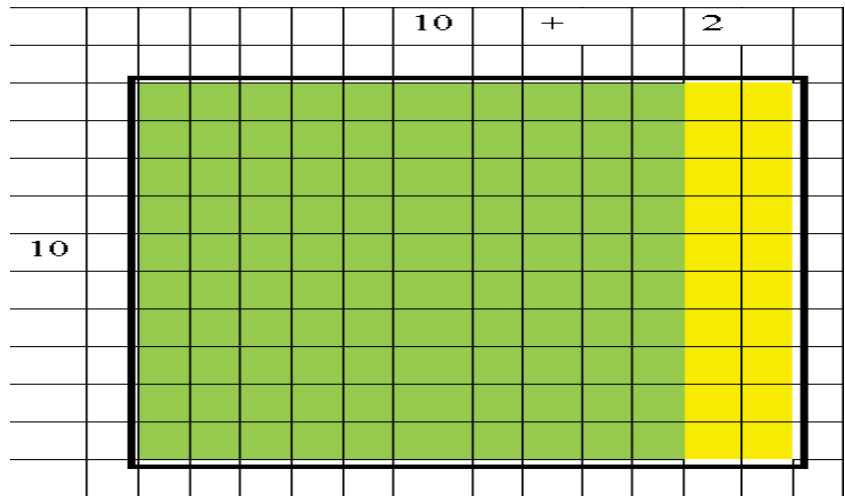
..... $\times$ =

Boxes in the green figure =

..... $\times$ =

Total boxes =

..... + =



Now It's Your Turn

Make a 12×15 rectangle in your grid notebook and divide it into two rectangles. Then count the total number of boxes.



Let's Discuss

- Lakshmi - Mom, the goods train has 24 bogies, and each bogie has 12 wheels.

Mom - Very good.

How many wheels are there in total on the bogies?

Lakshmi starts thinking -

24×12 but 12 is also $10 + 2$. One bogie has 12 wheels.

Mom said - Lakshmi, you are thinking correctly. We can do it this way, too.



$$\begin{array}{r}
 24 \\
 \times 12 \\
 \hline
 48 \quad (24 \times 2) \\
 + 240 \quad (24 \times 10) \\
 \hline
 288
 \end{array}$$

Total wheels = 288

Try it

Multiply in the same way -

(I) 48×36

(ii) 38×67

(iii) 96×84

(iv) 198×27

Multiplication of a Two-Digit Number by a Two-Digit Number

Example -

$$\begin{array}{r} \textcircled{6} \\ \text{T. O.} \\ 9 \quad 5 \\ \times 1 \quad 3 \\ \hline 1235 \end{array}$$

(i) $13 \times 5 = 65$. We write the unit digit 5 below and carry over 6 to the tens place.

(ii) $13 \times 9 = 117$. We add the carry-over 6.
 $117 + 6 = 123$

Multiplication of a Three-Digit Number by a Two-Digit Number

Example -

$$\begin{array}{r} \text{H. T. O.} \\ 3 \quad 8 \quad 2 \\ \times 2 \quad 5 \\ \hline 1 \quad 9 \quad 1 \quad 0 \leftarrow (382 \times 5) \\ + 7 \quad 6 \quad 4 \quad 0 \leftarrow (382 \times 20) \\ \hline 9 \quad 5 \quad 5 \quad 0 \end{array}$$

(i) First, multiply the unit digit by all digits.

(ii) $382 \times 5 = 1910$

(iii) Then, multiply the tens digit by all digits.
 $382 \times 20 = 7640$

(iv) In this way, write numbers one below the other and add them to get the product.

Example -

612 students are studying in the Government Upper Primary School, Kishanpura. A donor donated ₹15 per student for uniforms. How much total amount the donor donated?

Solution: Number of students studying in the school = 612 students

Amount donated by the donor per student = ₹15

Total amount donated by the donor = $612 \times 15 = 9,180$ rupees

Therefore, the donor donated an amount of ₹9,180.

- Multiplication is the operation of repeatedly adding the same number.
- When a number is multiplied by 1, the product is the number itself.
For example: $5 \times 1 = 5$, $26 \times 1 = 26$
- When a number is multiplied by zero, or zero is multiplied by a number, the product is zero.
For example: $8 \times 0 = 0$, $0 \times 8 = 0$
- If we add one zero after a number, we get the product of that number and 10. When a number is multiplied by 100, two zeros are added after that number, and when multiplied by 1000, three zeros are added. For example -
 $5 \times 10 = 50$ $72 \times 10 = 720$
 $5 \times 100 = 500$ $72 \times 100 = 7200$
- Changing the order of numbers does not change the product. For example: $18 \times 5 = 90$ and $5 \times 18 = 90$. This rule also applies to multiplying more than two numbers.

Problems Based on Multiplication

In the previous section, we learned different methods to multiply ordinary numbers. In this section, we will learn the use of multiplication in daily life problems.

Example 1: The cost of an almirah is ₹2169. What will be the cost of 4 almirahs?

Solution: The cost of one almirah = ₹2169

Total cost of 4 almirahs = 4×2169

$$\begin{array}{r} 2169 \\ \times \quad 4 \\ \hline 8676 \end{array}$$

Therefore, the cost of 4 almirahs will be ₹8676.

Example 2: A person's monthly expense is ₹1750. What will be his expense for 5 months?

Solution: A person's monthly expense = ₹1750

So, his expense for 5 months = $₹1750 \times 5$

$$\begin{array}{r} 1750 \\ \times \quad 5 \\ \hline 8750 \end{array}$$

Therefore, the expense for 5 months is ₹8750.

Example 3: There are 144 matchsticks in a bundle.

How many matchsticks will there be in 12 bundles of this type?

Solution: Matchsticks in one bundle = 144

Total matchsticks in 12 bundles = 144×12

$$\begin{array}{r} 144 \\ \times 12 \\ \hline 288 \\ 1440 \\ \hline 1728 \end{array}$$

Therefore, there will be 1728 matchsticks in 12 bundles.

Practice Work

1. Fill in the blanks

(i) $4 \times 1 = \boxed{}$

(iii) $7 \times 100 = \boxed{}$

(v) $180 \times 0 = \boxed{}$

(vii) $15 \times \boxed{} = 1500$

(ix) $\boxed{} \times 100 = 1800$

(ii) $5 \times 10 = \boxed{}$

(iv) $8 \times 1000 = \boxed{}$

(vi) $10 \times 100 = \boxed{}$

(viii) $14 \times \boxed{} = 140$

(x) $\boxed{} \times 10 = 660$

2. Multiply -

(i) $23 \times 45 =$

(iii) $67 \times 89 =$

(v) $38 \times 112 =$

(vii) $49 \times 76 =$

(ix) $25 \times 248 =$

(ii) $81 \times 73 =$

(iv) $92 \times 56 =$

(vi) $23 \times 299 =$

(viii) $44 \times 102 =$

(x) $58 \times 87 =$

3. The cost of one copy is ₹15. What will be the cost of 9 copies?
4. One packet contains 75 pencils. How many pencils will there be in 19 such packets?
5. There are 79 beads in a garland. How many beads will there be in 68 such garlands?
6. The cost of a small bicycle is ₹1560. What will be the cost of 6 such bicycles?
7. If a cricket team has 11 players, how many players will there be in total in 12 teams?
8. One box contains 1440 soap bars. How many soap bars will there be in 6 boxes?
9. A family uses 12 kg of rice, 15 kg of flour, and 6 liters of oil every month. The price of rice is ₹45 per kg, flour is ₹30 per kg, and oil is ₹120 per litre. What is the family's total monthly grocery expense?
10. In a school in Barmer, each student is given 4 pens, 2 notebooks, and 1 eraser. The cost of a pen is ₹10, a notebook is ₹35, and an eraser is ₹5. If there are 25 students in the class, what will be the total cost of the material?



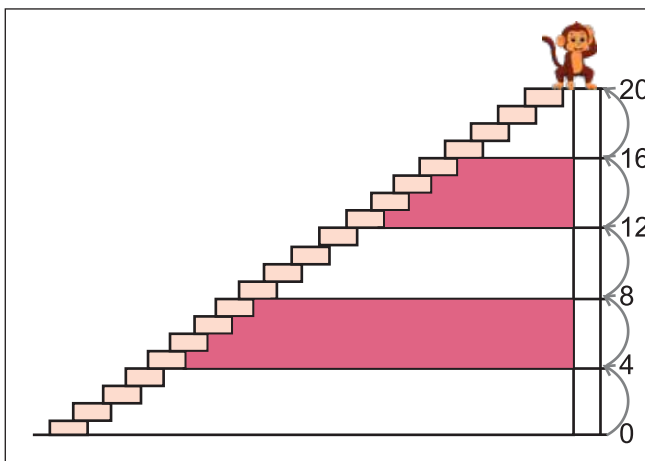
Let's discuss

It's the bear cub's birthday party in the jungle. All his friends - the rabbit, pigeon, tortoise, giraffe, Chiku- the monkey, elephant, parrot, and mynah - have come to the birthday party.

Chiku the monkey started playing at the bear's house during the party. The bear had built 20 stairs in his house. He climbed to the top stairs and started jumping around. While coming down, he started taking leaps of four steps at a time. Just think and tell, in how many leaps will he reach the bottom?

The rabbit thought about it this way -

Chiku the monkey will come down 4 stairs in 1 leap.



$$\begin{array}{r}
 20 \\
 - 4 \quad \text{---} \textcircled{1} \\
 \hline
 16 \\
 - 4 \quad \text{---} \textcircled{2} \\
 \hline
 12 \\
 - 4 \quad \text{---} \textcircled{3} \\
 \hline
 8 \\
 - 4 \quad \text{---} \textcircled{4} \\
 \hline
 4 \\
 - 4 \quad \text{---} \textcircled{5} \\
 \hline
 0
 \end{array}$$

After the first leap, he will reach the sixteenth stair.

After the second leap, he will reach the twelfth stair.

After the third leap, he will reach the eighth stair.

After the fourth leap, he will reach the fourth stair.

After the fifth leap, he will reach the ground.

Now, the giraffe asked the parrot, "If Chiku the monkey jumps 5 steps at a time, how many leaps will it take to reach the bottom?"

He will come down 5 steps in one leap.

After the first leap, he will reach the fifteenth stair.

After the second leap, he will reach the..... stair.

After the third leap, he will reach the stair.

After the fourth leap, he will reach the ground.

$$\begin{array}{r}
 20 \\
 - 5 \\
 \hline
 \square\square \\
 - \square \\
 \hline
 \square\square \\
 - \square \\
 \hline
 \square\square \\
 - \square \\
 \hline
 \square
 \end{array}
 \begin{array}{l}
 \text{--- ①} \\
 \text{--- ②} \\
 \text{--- ③} \\
 \text{--- ④}
 \end{array}$$

The bear made 80 ladoos. Everyone will eat ladoos together. The little bear was thinking, how can I distribute these 80 ladoos equally among all my friends? "Oh! I'll give each friend 10 ladoos," he thought. He put 10 ladoos each into separate plates and gave one plate to the rabbit.

If 10 ladoos were distributed, how many were left?

$$80 - 10 = 70$$

He gave one plate to the elephant.

If 10 more ladoos were distributed, how many were left?

$$70 - 10 = 60$$

He gave one plate to Chiku the monkey.

If 10 more ladoos were distributed, how many were left? $60 - 10 = 50$

In this way, he distributed 10 ladoos to all his friends.

"Oh! I have to subtract repeatedly. Is there a solution to this problem?"

Just then, the elephant said, "Bear, your party is so much fun. What if we had to distribute 48 ladoos among 4 friends?"

The bear thought for a moment and then said, "Oh! This is easy. We have also learnt how to distribute equally.

$$\text{Since } 48 = 40 + 8 = 10 + 10 + 10 + 10 + 8$$

Now, we will give 10 ladoos to each friend and also distribute the remaining 8 ladoos.

From the 8 ladoos, each friend will get 2 ladoos. Thus, each friend will get

$$10 + 2 = 12 \text{ ladoos.}$$



At the party, 8 friends took responsibility for looking after 120 trees around the jungle. If 120 trees are divided among 8 friends, how many trees will each friend be responsible for?

The elephant said, "I have a good way to find this out."

$$\begin{array}{r} 10 \\ 8 \overline{) 120} \\ \underline{80} \\ 40 \end{array}$$

Each animal got 10 trees
80 trees distributed among 8 friends
40 trees are still left

$$\begin{array}{r} 5 \\ 8 \overline{) 40} \\ \underline{40} \\ 0 \end{array}$$

Each animal got 5 more trees
40 trees are also distributed

Each friend first got 10 trees and then 5 more trees, so each received $10+5=15$ trees.

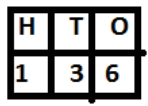
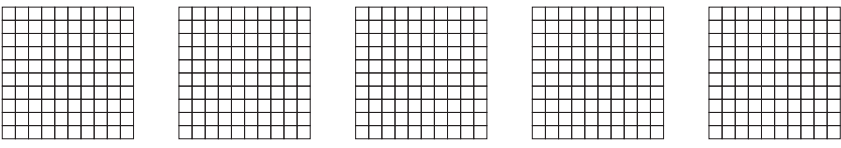
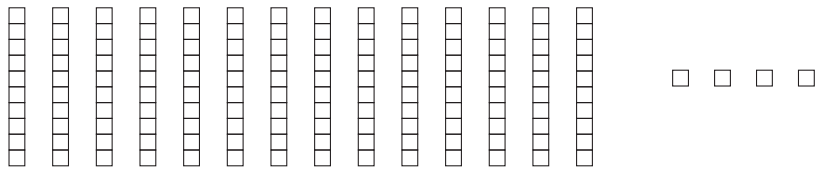
You also divide using your method

(i) $24 \div 8 = ?$

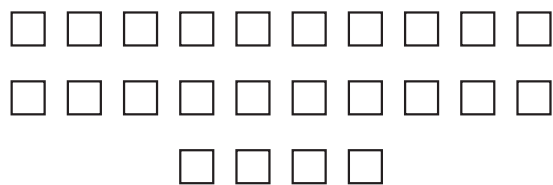
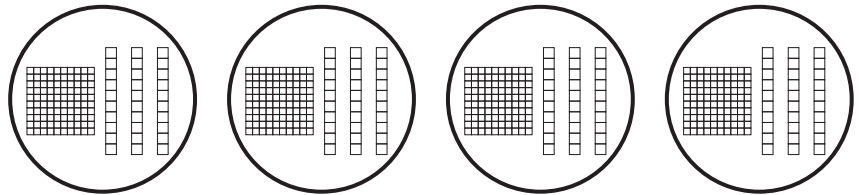
(ii) $49 \div 7 = ?$

(iii) $75 \div 5 = ?$

Let's divide a slightly larger number -

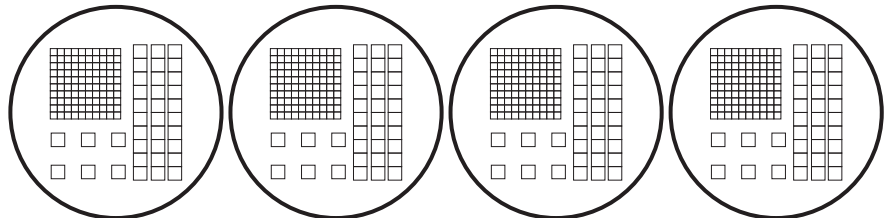
Standard method of division	Using place value blocks for the standard division method. If this material is not available, one can use 1, 10, and 100 notes (from the ABL kit) or stick bundles.
 $\begin{array}{r} 4 \overline{) 544} \\ \underline{-4} \\ 14 \\ \underline{-12} \\ 24 \\ \underline{-24} \\ 0 \end{array}$	 Step 1: Dividing 5 hundreds by 4, each gets 1 hundred and 1 hundred remains, which on regrouping into 10 tens in the next step will combine with 4 tens to make 14 tens, and there will also be 4 units in the unit place. 

Step 2: When 14 tens are divided by 4, each will get 3 tens and 2 tens will remain, which on regrouping into units will become 20 units, and on combining with 4 units will become 24 units.



Step 3: Dividing 24 units by 4, each will get 6 units and '0' will remain. Thus, on dividing 544 by 4, each will get 1 hundred, 3 tens, and 6 units.

$$544 \div 4 = 136$$



Some more examples of division operation

$$56 \div 4 = 14$$

$$\begin{array}{r} 4 \overline{) 56} \left(14 \right. \\ \underline{- 4} \\ 16 \\ \underline{- 16} \\ 0 \end{array}$$

Step -1: Reading the table of 4 once gives 4. Subtracting 4 from 5 gives 1.

Step -2: Bringing down the unit digit 6 gives the number 16. Then reading the table of 4 four times gives 16.

Step -3: Subtracting 16 from 16 gives a remainder of 0.

$$312 \div 3 = 104$$

$$\begin{array}{r} 3 \overline{) 312} \quad (104 \\ - 3 \downarrow \\ \hline 01 \downarrow \\ - 0 \downarrow \\ \hline -12 \\ 12 \\ \hline 00 \end{array}$$

$$\text{Dividend} = 312$$

$$\text{Divisor} = 3$$

$$\text{Quotient} = 104$$

$$\text{Remainder} = 0$$

$$\boxed{\text{Quotient} \times \text{Divisor} + \text{Remainder} = \text{Dividend}}$$

$$3 \times 0 = 0$$

$$3 \times 1 = 3$$

$$3 \times 2 = 6$$

$$3 \times 3 = 9$$

$$3 \times 4 = 12$$

$$3 \times 5 = 15$$

$$3 \times 6 = 18$$

$$3 \times 7 = 21$$

$$3 \times 8 = 24$$

$$3 \times 9 = 27$$

$$3 \times 10 = 30$$

(i)

$$26 \div 2 = 13$$

$$\begin{array}{r} 2 \overline{) 26} \quad (13 \\ - 2 \downarrow \\ \hline 6 \\ - 6 \\ \hline 0 \end{array}$$

$$\boxed{13 \times 2 = 26}$$

(ii)

$$125 \div 5 = 25$$

$$\begin{array}{r} 5 \overline{) 125} \quad (025 \\ - 0 \downarrow \\ \hline 12 \downarrow \\ - 10 \downarrow \\ \hline 25 \\ - 25 \\ \hline 0 \end{array}$$

$$\boxed{025 \times 5 = 125}$$

(iii)

$$213 \div 21$$

$$\begin{array}{r} 21 \overline{) 213} \quad (10 \\ - 21 \downarrow \\ \hline 3 \\ - 0 \\ \hline 3 \end{array}$$

$$\text{Dividend} = 213$$

$$\text{Divisor} = 21$$

$$\text{Quotient} = 10$$

$$\text{Remainder} = 3$$

$$\boxed{10 \times 21 + 3 = 213}$$

(iv) If the price of 20 kg sugar is ₹900, find the price of one kg sugar.

Solution: Since the price of 20 kg sugar = ₹900

Therefore, the price of 1 kg sugar = $(900 \div 20)$ rupees = ₹45

- Division is the operation of repeatedly subtracting the same number. For example: $15 \div 5 = 3$, meaning 5 can be subtracted from 15 three times.
- When a number is divided by 1, the quotient is the number itself.
For example: $512 \div 1 = 512$
- When a number is divided by itself, the quotient is always 1. For example: $98 \div 98 = 1$
- Division by 0 is never performed on any number.
- When 0 is divided by any number, the quotient is always 0. For example: $0 \div 72 = 0$

Word Problems Related to Division

So far, we have discussed problems involving ordinary numbers in division. Now we will discuss problems related to daily life.

Example 1:

A gardener has 780 rose plants. He planted them equally in 6 rows. How many plants will there be in each row?

Solution: Rose plants with the gardener = 780
Number of rows for planting = 6
Number of plants in each row = $780 \div 6$

$$\begin{array}{r} 6 \overline{) 780} (130 \\ - 6 \downarrow \\ \hline 18 \downarrow \\ - 18 \downarrow \\ \hline 000 \\ - 000 \\ \hline 0 \end{array}$$

Answer: Therefore, there will be 130 plants in each row.

Example 2:

A laborer earns ₹2380 in a week. How much does he earn in a day?

Solution: Laborer's earning in a week = ₹2380
Number of days in a week = 7
Laborer's earning in a day = $2380 \div 7$

$$\begin{array}{r} 7 \overline{) 2380} (340 \\ - 21 \downarrow \\ \hline 28 \downarrow \\ - 28 \downarrow \\ \hline 000 \\ - 000 \\ \hline 0 \end{array}$$

Answer: Therefore, the laborer earns ₹340 in a day.

Example 3:

The product of two numbers is 176. If one number is 8, find the other number.

Solution: Product of two numbers = 176
One number = 8
Other number = $176 \div 8$

$$\begin{array}{r} 8 \overline{) 176} (22 \\ - 16 \downarrow \\ \hline 16 \downarrow \\ - 16 \\ \hline 0 \end{array}$$

Answer: Therefore, the other number is 22.

Practice Work

1. Solve -

(i) $7 \times 6 = 42$

$$42 \div 6 = 7$$

$$42 \div 7 = 6$$

(ii) $9 \times 4 = 36$

(iii) $6 \times 8 = 48$

(iv) $10 \times 4 = 40$

(v) $72 \div 8 = 9$

$$9 \times 8 = 72$$

$$8 \times 9 = 72$$

(vi) $35 \div 7 = 5$

(vii) $56 \div 8 = 7$

(viii) $150 \div 10 = 15$

(ix) $120 \div 12 = 10$

2. Match the following

$$7 \times 15$$

$$8 \times 9$$

$$4 \times 19$$

$$75 \times 3$$

$$100 \div 2$$

$$72$$

$$25 \times 9$$

$$105 \div 1$$

$$50$$

$$76$$

$$38 \times 2$$

$$225$$

$$25 \times 2$$

$$105$$

$$36 \times 2$$

- In the morning assembly, 161 children are standing equally in 7 rows in the ground. How many children are there in each row?
- I have 72 apples that need to be placed equally in 3 baskets. How many apples will be in each basket?
- By what number should 25 be multiplied to get a product of 625?

6. A gardener has 120 flowers. Garlands of 24 flowers each are to be prepared. How many such garlands can be prepared from 120 flowers?
7. 50 copies are to be distributed equally among 10 children. How many copies each child will get?
8. There are a total of 240 students in a school. If the students are divided into 4 equal groups, then how many students will be in each group?
9. Rohan has a total of 560 marbles. If Rohan distributes those marbles equally among his 10 friends, then how many marbles each one get?
10. If there are 250 bananas in five baskets, then how many bananas are in one basket?
11. There are a total of 100 notebooks in a box. These notebooks are to be distributed equally among 20 students. Then how many notebooks each student will get?
12. The cost of 4 kg of wheat is ₹96. What will be the cost of one kg of wheat?
13. The product of two numbers is 90. If one number is 10, find the other number.
14. By what number should 480 be divided to get 32 as the quotient?
15. Anshu went to get sweet boxes for all her brothers for the Rakshabandhan festival. The confectioner had a plate of 60 ladoos ready. Anshu asked him to pack them equally into 5 boxes. The confectioner packed ladoos in each box. The cost of one box of ladoos was ₹75. Anshu gave the confectioner ₹..... for 5 boxes. After taking the sweets, Anshu bought 9 packets of rakhis from the shop. Each packet contains 5 rakhis. Anshu bought a total of rakhis. The price of each packet is ₹40, so the price of one rakhi will be ₹.....



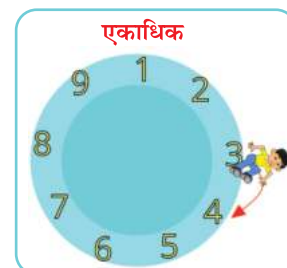
Let's discuss

You learned about Ekadhika, Ekanyuna, Ekadhikena Purvena, and Ekanyunena Purvena in the previous class. In this chapter, you will learn addition and subtraction operations using the Ekadhikena Purvena and Ekanyunena Purvena methods.

Before learning addition and subtraction operations using Vedic mathematical methods, let's do some practice.

Ekadhika means (one more). To find the Ekadhika of a number, a dot (·) is placed above the unit digit (the first digit from the right side) of that number (this dot is called the Ekadhika sign), and 1 is added to the number.

For example: (i) Ekadhika of 8 (ii) Ekadhika of 25
 $= \dot{8} = 8 + 1 = 9$ $= 2\dot{5} = 25 + 1 = 26$
 (iii) Ekadhika of 89 (iv) Ekadhika of 99
 $= 8\dot{9} = 89 + 1 = 90$ $= 9\dot{9} = 99 + 1 = 100$



Ekadhikena Purvena means one more than the previous digit. For example, in the number 42, if we need to find the Ekadhikena Purvena of digit 2, then the Ekadhikena of the digit 4 (which is before 2) will be 5, and the Ekadhikena Purvena of digit 2 in 42 will be 52.

Write the Ekadhikena Purvena of the following numbers:

Number	Ekadhikena Purvena	New Number
(1) 18, for digit 8	$\dot{1}8$	28
(2) 425, for digit 5	$4\dot{2}5$	435
(3) 83, for digit 8	$\dot{0}83$	183
(4) 148, for digit 4	.....	.....
(5) 358, for digit 8	.....	.....
(6) 405, for digit 0	.....	.....
(7) 913, for digit 9	.....	.....
(8) 101, for digit 0	.....	.....
(9) 6589, for digit 8	.....	.....
(10) 5739, for digit 7	.....	.....

Let's learn to add using the Ekadhikena Purvena method.

Adding using the Ekadhikena Purvena Method

In this method, as soon as the sum of two digits is 10 or more than 10, the Ekadhikena sign (.) is placed on the previous digit. This process continues.

We have several methods for addition in Vedic Mathematics. We are going to learn the Ekadhikena Purvena method for adding numbers.

Steps to add numbers using the Ekadhikena Purvena Method -

Example 1 -

$$\begin{array}{r} \text{T.} \quad \text{O.} \\ 3 \quad 8 \\ + 4 \quad 7 \\ \hline 8 \quad 5 \end{array}$$

1. Sum of unit digits: $8 + 7 = 15$. The sum is greater than 10.
2. Therefore, write 5 in the sum, and make the Ekadhikena Purvena of digit 7 as $\dot{4}$.
3. Sum of tens digits: $3 + \dot{4} = 3 + 5 = 8$. Write 8.

Example 2 -

$$\begin{array}{r} \text{T.} \quad \text{O.} \\ 4 \quad 7 \\ + \dot{0} \quad \dot{8} \quad 5 \\ \hline 1 \quad 3 \quad 2 \end{array}$$

1. Sum of unit digits: $7 + 5 = 12$. The sum is greater than 10.
2. Therefore, write 2 in the sum and place the Ekadhikena sign on the digit 8 (the digit before 5).
3. Sum of tens digits: $4 + \dot{8} = 4 + 9 = 13$. Therefore, write 3 in the sum and place the Ekadhikena sign on the digit 0 (the digit before 8).
4. $\dot{0} = 0 + 1 = 1$. Write 1.

Example 3 -

$$\begin{array}{r} \text{H.} \quad \text{T.} \quad \text{O.} \\ 4 \quad 8 \quad 5 \\ + \dot{1} \quad 6 \quad 3 \\ + \dot{2} \quad \dot{8} \quad 7 \\ \hline 9 \quad 3 \quad 5 \end{array}$$

1. Sum of unit digits: $5 + 3 + 7 = 15$. The sum is greater than 10.
2. Therefore, write 5 in the sum and make the Ekadhikena Purvena of digit 7 as $\dot{8}$.
3. Sum of tens digits: $8 + 6 = 14$. The sum is greater than 10. Therefore, make the Ekadhikena Purvena of digit 6 as $\dot{1}$. Now, $4 + \dot{8} = 4 + 9 = 13$. Therefore, write 3 in the sum and make the Ekadhikena Purvena of digit 8 as $\dot{2}$.
4. Sum of hundreds digits: $4 + \dot{1} + \dot{2} = 4 + 2 + 3 = 9$. Write 9.

Now it's your turn

$$\begin{array}{r} 2 \quad 6 \quad 8 \\ + 3 \quad 5 \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \quad 7 \quad 5 \\ + 2 \quad 7 \quad 4 \\ + 3 \quad 5 \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \quad 7 \quad 7 \\ + 2 \quad 7 \quad 4 \\ + 3 \quad 2 \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 7 \quad 5 \\ + 2 \quad 6 \quad 5 \\ + 3 \quad 5 \quad 8 \\ \hline \end{array}$$



Let's discuss

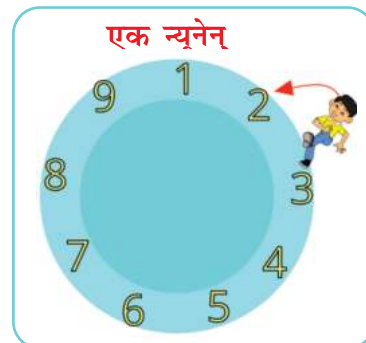
Eka Nyuna - 'Eka Nyuna' means one less than a number. To find the Eka Nyuna of a number, a dot (.) is placed below the unit digit (the first digit from the right side) of that number (this dot is called the Eka Nyuna sign), and 1 is subtracted from the number.

For example : (i) Eka Nyuna of $9\dot{9} = 9 - 1 = 8$

(ii) Eka Nyuna of $19\dot{9} = 19 - 1 = 18$

(iii) Eka Nyuna of $99\dot{9} = 99 - 1 = 98$

(iv) Eka Nyuna of $100\dot{0} = 100 - 1 = 99$



Eka Nyuna Purvena - Eka Nyuna Purvena means one less than the previous digit. For example, if we need to find the Eka Nyuna Purvena of digit 0 in the number 50, then the Eka Nyuna of the digit 5 (which is before 0) will be 5 (4), and the Eka Nyuna Purvena of digit 0 in 50 will be 40.

Write the Eka Nyuna Purvena of the following numbers.

Number	Eka Nyuna Purvena	New Number
(1) 25, for digit 5	$2\dot{5}$	15
(2) 94, for digit 4	$9\dot{4}$	84
(3) 183, for digit 8	$1\dot{8}3$	83
(4) 48, for digit 8	.....	.....
(5) 558, for digit 8	.....	.....
(6) 408, for digit 0	.....	.....
(7) 913, for digit 3	.....	.....
(8) 158, for digit 5	.....	.....
(9) 6581, for digit 8	.....	.....
(10) 5735, for digit 7	.....	.....

Param Mitra Ank (Digit)

Two digits whose sum is 10 are called complementary digits or Param Mitra Ank of each other.

For example -

Param Mitra Ank of 1 = 9

Param Mitra Ank of 2 = 8

Param Mitra Ank of 3 = 7

Param Mitra Ank of 4 = 6

Param Mitra Ank of 5 = 5

Param Mitra Ank of 6 = 4

Param Mitra Ank of 7 = 3

Param Mitra Ank of 8 = 2

Param Mitra Ank of 9 = 1

Important note: The Param Mitra Ank of 10 is considered to be 1. This is because 10 is seen as 1 and 0.

Let's learn to subtract using the Eka Nyunena Purvena method.

Subtracting using the Eka Nyunena Purvena Method

Param Mitra Ank is a digit that combines with a given digit to form 10, and it is used in Vedic mathematics to simplify calculations, especially in subtraction.

Example 1 -

$$\begin{array}{r} 54 \\ - 46 \\ \hline 08 \end{array}$$

Steps -

1. 6 cannot be subtracted from 4, so add the Param Mitra Ank of 6 (which is 4) to 4. ($4 + 4 = 8$)
2. Make the Eka Nyunena Purvena of digit 4 (the digit before 4 in 54) as 5 (which is 4).
3. Similarly, subtract 4 from 5 (which is 4 after Eka Nyunena Purvena) and write 0.

Example 2 -

$$\begin{array}{r} 632 \\ - 287 \\ \hline 345 \end{array}$$

Steps -

1. 7 cannot be subtracted from 2, so add the Param Mitra Ank of 7 (which is 3) to 2. ($2 + 3 = 5$)
2. Make the Eka Nyunena Purvena of digit 3 (the digit before 2 in 632) as 6 (which is 2).
3. Similarly, 8 cannot be subtracted from 3 (which is 6), so add the Param Mitra Ank of 8 (which is 2) to 6. ($6 + 2 = 8$)
4. Make the Eka Nyunena of 6 as 5 (which is 8).
5. Subtract 2 from 5 (which is 3) and write 3.



Let's Solve

$$\begin{array}{r} 817 \\ - 269 \\ \hline \end{array}$$

$$\begin{array}{r} 735 \\ - 448 \\ \hline \end{array}$$

$$\begin{array}{r} 945 \\ - 257 \\ \hline \end{array}$$

$$\begin{array}{r} 612 \\ - 199 \\ \hline \end{array}$$

Practice Work

1. Fill in the blanks -

- (i) Ekadhikena Purvena of digit 5 in number 456 = $\overset{4}{\dot{4}}56 = 556$
- (ii) Ekadhikena Purvena of digit 8 in number 238 = $2\overset{2}{\dot{3}}8 = \dots\dots\dots$
- (iii) Ekadhikena Purvena of digit 2 in number 82 = $\overset{8}{\dot{8}}2 = \dots\dots\dots$
- (iv) Ekadhikena Purvena of digit 5 in number 705 = $7\overset{7}{\dot{0}}5 = \dots\dots\dots$

2. Fill in the blanks -

- (I) Eka Nyunena Purvena of digit 5 in number 385 = $3\overset{3}{\dot{8}}5 = 375$
- (ii) Eka Nyunena Purvena of digit 1 in number 715 = $\dots\dots\dots$
- (iii) Eka Nyunena Purvena of digit 2 in number 42 = $\dots\dots\dots$
- (iv) Eka Nyunena Purvena of digit 7 in number 407 = $\dots\dots\dots$

3. Fill in the blanks -

- (I) Param Mitra Ank of 2 = $\dots\dots\dots$
- (ii) Param Mitra Ank of 9 = $\dots\dots\dots$
- (iii) Param Mitra Ank of 5 = $\dots\dots\dots$
- (iv) Param Mitra Ank of 6 = $\dots\dots\dots$

4. Find the sum using the Vedic Mathematical Method (Ekadhikena Purvena) -

(i)	(ii)	(iii)	(iv)
$\begin{array}{r} 4\ 2\ 6 \\ + 1\ 2\ 7 \\ \hline \end{array}$	$\begin{array}{r} 5\ 6\ 3 \\ + 4\ 4\ 7 \\ \hline \end{array}$	$\begin{array}{r} 5\ 3\ 8 \\ + 8\ 6\ 3 \\ \hline \end{array}$	$\begin{array}{r} 2\ 3\ 8 \\ + 7\ 1\ 2 \\ \hline \end{array}$

5. Perform subtraction using the Vedic Mathematical Method (Eka Nyunena Purvena) -

(i)	(ii)	(iii)	(iv)
$\begin{array}{r} 6\ 8\ 7 \\ - 4\ 9\ 8 \\ \hline \end{array}$	$\begin{array}{r} 3\ 2\ 4 \\ - 1\ 9\ 9 \\ \hline \end{array}$	$\begin{array}{r} 2\ 7\ 3 \\ - 1\ 5\ 6 \\ \hline \end{array}$	$\begin{array}{r} 4\ 7\ 6 \\ - 2\ 5\ 7 \\ \hline \end{array}$



Let's discuss



One day, Lakshya went to the garden with his grandfather, who was arranging flowers in a particular sequence. "Grandpa, why are you putting the flowers like that?" Lakshya asked curiously.

Grandpa, with a smile, explained, "That's a pattern, son. I'm arranging them as red, white, yellow, then red, white, yellow again."

He asked his grandfather, "Grandpa, can I also make such a pattern?"

"Of course!" Grandpa encouraged. "You can even make them with your friends."

Taking his grandfather's advice, Lakshya and his friends decided to make a pattern using stones. They arranged them in the order of red, blue, green, then red, blue, green once more. Lakshya was very happy with his pattern.





Let's try

- (i) What did Lakshya see with his grandfather?
- (ii) In what order did Lakshya's grandfather arrange the flowers?
- (iii) In what color did Lakshya make the stone pattern with his friends?

Meaning of Pattern

We see a definite order in courtyard borders, cloth borders, paintings, rangoli borders, numbers, etc. This definite order is called a pattern.

Multiplication Pattern

$$2 \times 1 = 2, \quad 2 \times 2 = 4, \quad 2 \times 3 = 6, \quad 2 \times 4 = 8$$

In this example, we have multiplied 2 by 1, 2, 3, and 4 and arranged the results in a pattern. The pattern is that the result increases by 2.

Example: 10, 20, 30, 40, 50,

In this example, we have multiplied 10 by 2, 3, and 4 and arranged the results in a pattern. The pattern is that the result increases by 10.

Here are multiplication patterns of numbers. Complete the pattern -

- | | | | | | | |
|----|-------------------|--------------------|--------------------|-------|-------|-------|
| 1. | $2 \times 1 = 2,$ | $2 \times 2 = 4,$ | $2 \times 3 = 6,$ | ..... | ..... | ..... |
| 2. | $3 \times 1 = 3,$ | $3 \times 2 = 6,$ | $3 \times 3 = 9,$ | ..... | ..... | ..... |
| 3. | $4 \times 1 = 4,$ | $4 \times 2 = 8,$ | $4 \times 3 = 12,$ | ..... | ..... | ..... |
| 4. | $5 \times 1 = 5,$ | $5 \times 2 = 10,$ | $5 \times 3 = 15,$ | ..... | ..... | ..... |
| 5. | $6 \times 1 = 6,$ | $6 \times 2 = 12,$ | $6 \times 3 = 18,$ | ..... | ..... | ..... |
| 6. | $7 \times 1 = 7,$ | $7 \times 2 = 14,$ | $7 \times 3 = 21,$ | ..... | ..... | ..... |

Division Pattern

Example-1:

243, 81, 27, 9, 3

In this, the next number is obtained by dividing each number by 3.

Example-2:

800, 400, 200, 100

In this, the next number is obtained by dividing each number by 2.



Let's try

(i) 5000, 2500, 1250,

(ii) 500, 100, 20,

(iii) 999, 333, 111,

(iv) 120, 60, 30,

Even Number Patterns

Numbers that are completely divisible by 2 are called even numbers. For example - 2, 4, 6, 8,

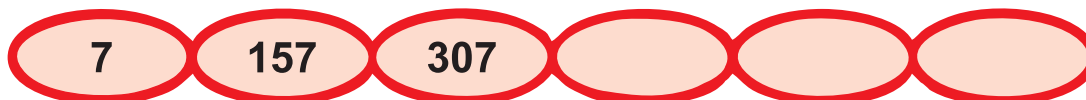
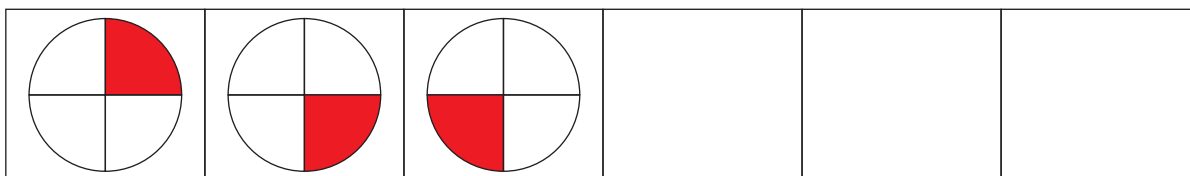
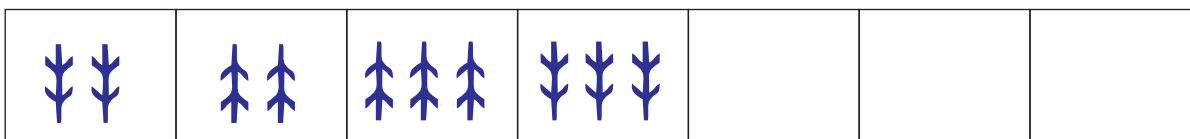
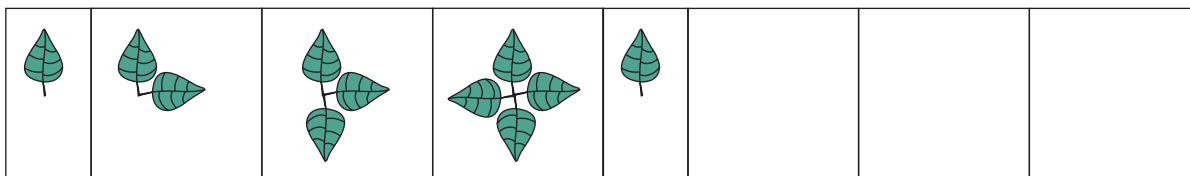
(i) 2, 4, 6,,,

(ii) 16, 18, 20,,,

(iii) 100,, 104,, 108

(iv) 1024, 512,, 128,

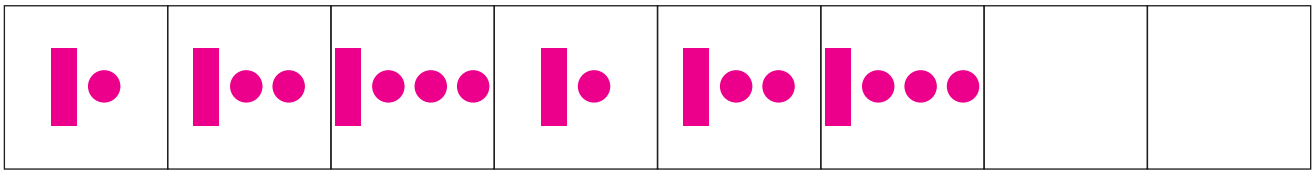
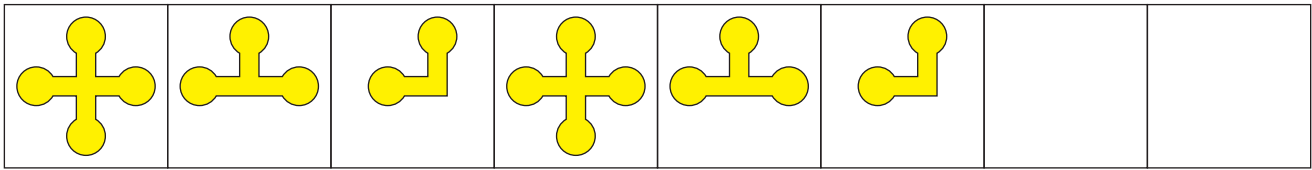
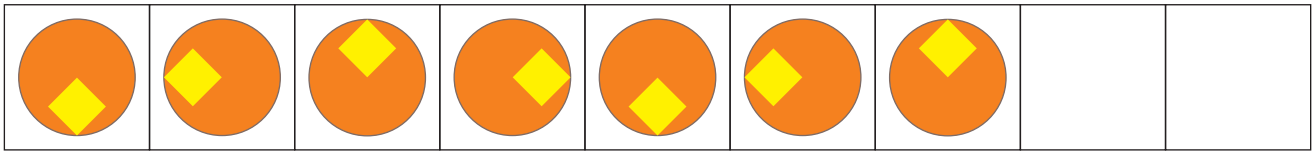
Khushi made different patterns with her blocks. Can you help her extend these patterns?



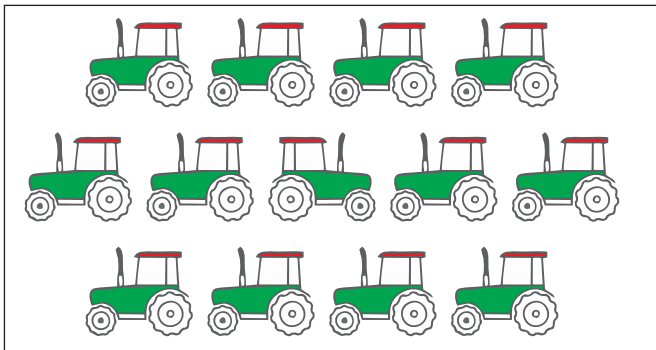
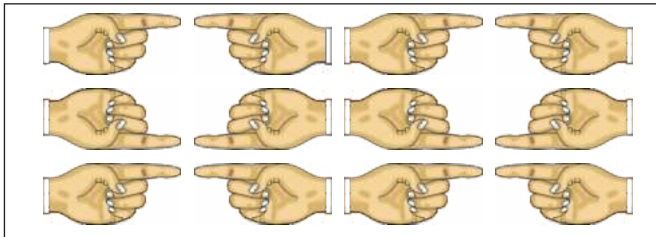
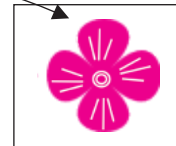
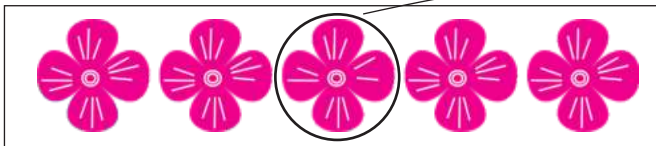
Create a pattern using numbers -



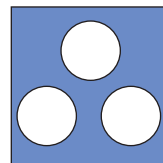
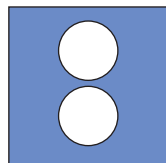
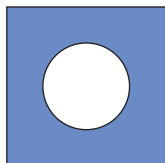
Identify the pattern and extend it



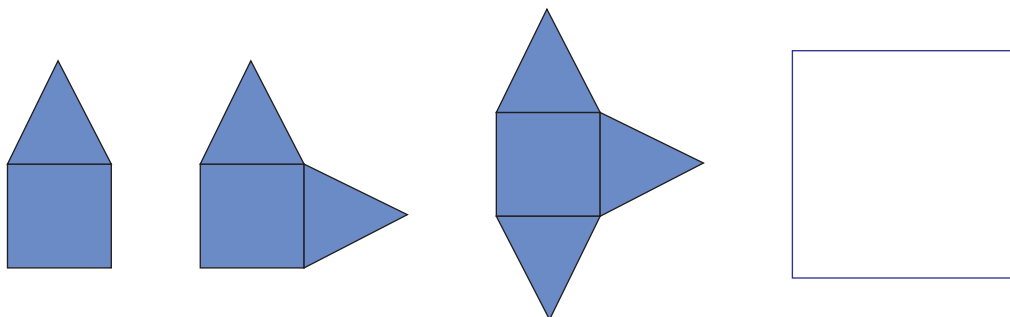
There are some mistakes in the pattern given below. Circle the mistakes and draw the correct picture in the box provided.



Complete the given pattern -

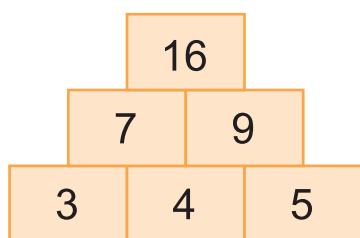


Complete the steps of the rangoli -



Some more patterns

Example-1



$$3 + 4 = 7, \quad 4 + 5 = 9$$

$$7 + 9 = 16$$

Example-2

$$1 + 2 + 3 = 6$$

$$2 + 3 + 4 = 9$$

$$3 + 4 + 5 = 12$$

.....

.....

.....

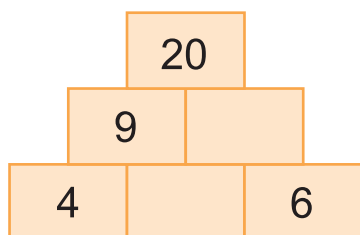
$$8 + 9 + 10 = 27$$

All sums are multiples of 3, and the sum is 3 times the middle number.



Let's try

(i)



(ii)

$$1 + 2 + 3 + 4 = 10$$

$$2 + 3 + 4 + 5 = 14$$

$$3 + 4 + 5 + 6 = 18$$

.....

.....

.....

$$10 + 11 + 12 + 13 = 46$$

Practice Work

1. Complete the multiplication pattern -

(i) $8 \times 1 = 8$, $8 \times 2 = 16$, $8 \times 3 = 24$, ,

(ii) $9 \times 1 = 9$, $9 \times 2 = 18$, $9 \times 3 = 27$, ,

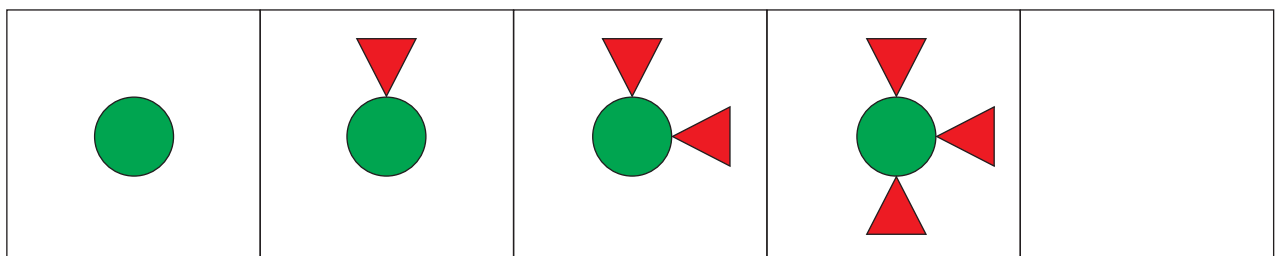
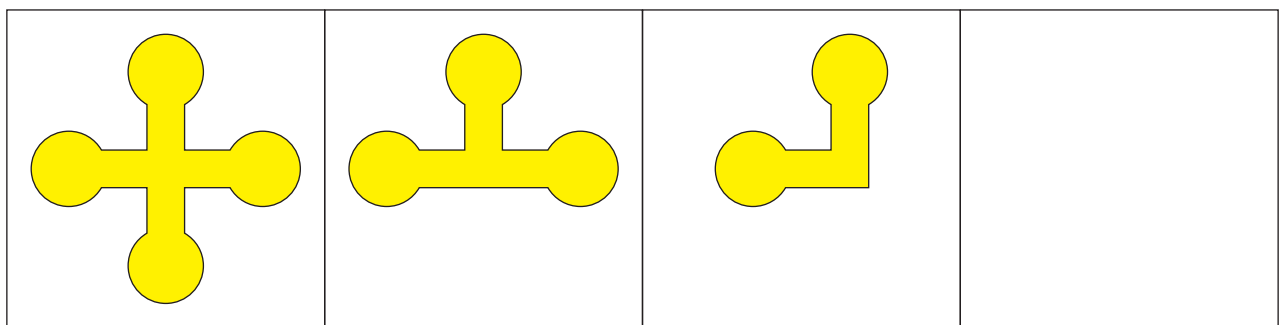
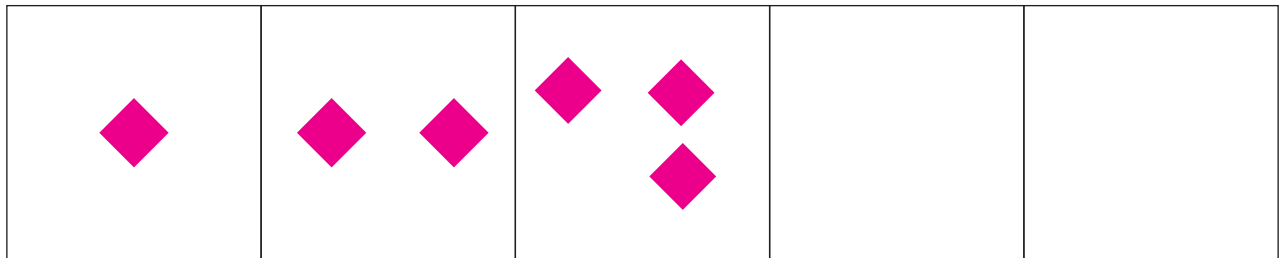
2. Complete the division pattern -

(i) $60 \div 1 = 60$, $60 \div 2 = 30$, $60 \div 3 = 20$,

(ii) $72 \div 1 = 72$, $72 \div 2 = 36$, $72 \div 3 = 24$,

(iii) 600, 300, 150

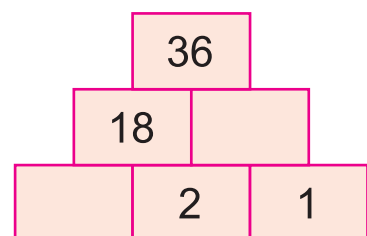
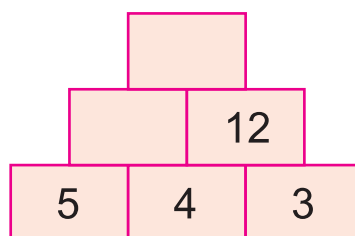
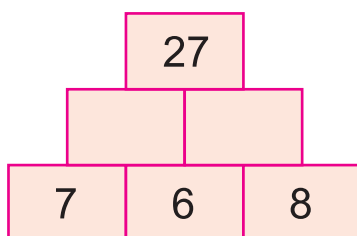
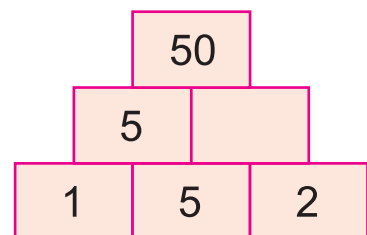
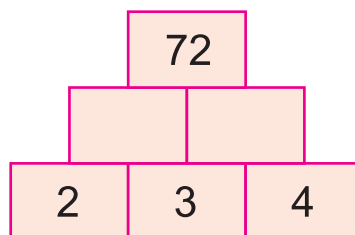
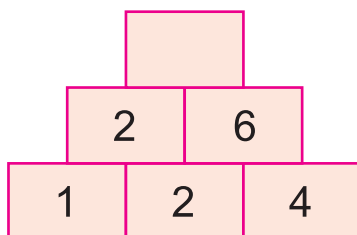
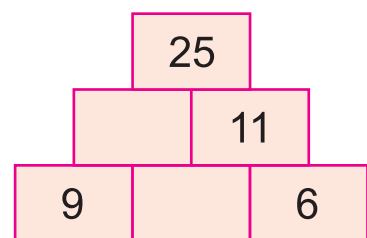
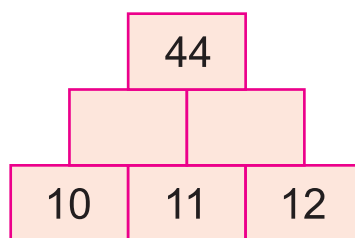
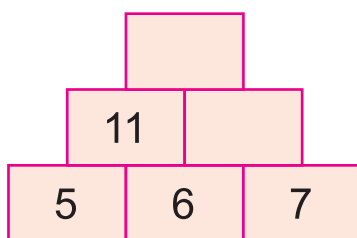
3. Identify the given pattern and extend it -



4. Identify the number pattern and fill in the blanks -

- (i) 111, 222, 333,,,
- (ii), 250, 500,
- (iii) 50,,,,, 300, 350
- (iv) 864, 432, 216,,,
- (v) 111,, 555,, 999
- (vi) 729, 243,,
- (vii) 800, 400,, 100,
- (viii) 999,, 111
- (ix), 200,, 800
- (x) 900,, 36

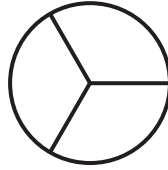
5. Understand the given pattern and fill in the blanks -



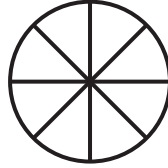
We Learnt and Understood - 2



1. $\frac{2}{3}$ Shade



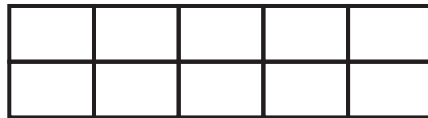
2. $\frac{3}{8}$ Shade

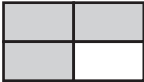


3. $\frac{4}{7}$ Shade



4. $\frac{6}{10}$ Shade



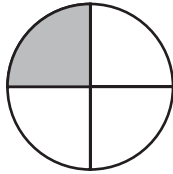
5.  Write the shaded part as a fraction

6.  Write the shaded part as a fraction

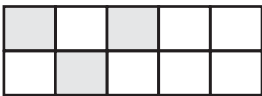
7. Write the shaded part of the given figures as a fraction -

(i) 
Paper strip

Fraction =

(ii) 
Bread

Fraction =

(iii) 
Chocolate

Fraction =

(iv) 
Glass

Fraction =

8. Put the appropriate signs $<$, $>$ or $=$ in the correct place -

$$\frac{3}{4} \quad \square \quad \frac{1}{4}$$

$$\frac{2}{8} \quad \square \quad \frac{1}{4}$$

$$\frac{5}{6} \quad \square \quad \frac{3}{6}$$

$$\frac{5}{8} \quad \square \quad \frac{7}{8}$$

9. Tick (✓) the smallest fraction among the given fractions -

(i) $\frac{5}{7}$, $\frac{4}{7}$, $\frac{6}{7}$

(ii) $\frac{3}{8}$, $\frac{5}{8}$, $\frac{7}{8}$

(iii) $\frac{3}{11}$, $\frac{5}{11}$, $\frac{9}{11}$

(iv) $\frac{3}{5}$, $\frac{7}{5}$, $\frac{2}{5}$

10. Fill in the blanks -

(I) Ekadhiken Purven of digit 5 in number 656 =

(ii) Ekadhiken Purven of digit 8 in number 348 =

11. Fill in the blanks -

(I) Ek Nynuen Purven of digit 5 in number 985 =

(ii) Ek Nynuen Purven of digit 1 in number 615 =

12. Fill in the blanks -

(I) Param Mitra of 3 =

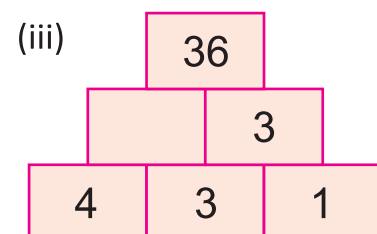
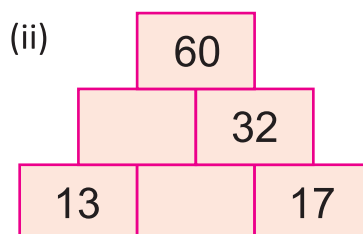
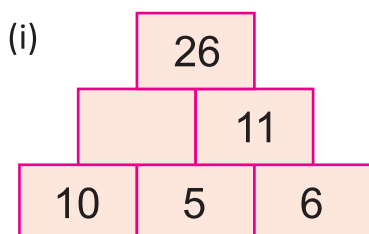
(ii) Param Mitra of 8 =

13. Identify the number pattern and fill in the blanks -

(i) 15, 45, 135,,

(ii) 1000,, 250,

14. Understand the given pattern and fill in the blanks -



15. Solve -

(i) 27×43

(ii) 56×39

(iii) 87×65

(iv) 142×28

(v) 325×26

(vi) 119×47

(vii) 73×84

(viii) 241×39

(ix) 45×65

16. Divide -

(i) $36 \div 6 =$

(ii) $42 \div 7 =$

(iii) $81 \div 9 =$

(iv) $64 \div 8 =$

(v) $90 \div 10 =$

(vi) $56 \div 7 =$

(vii) $72 \div 9 =$

(viii) $99 \div 11 =$

(ix) $63 \div 9 =$

17. Solve -

- (i) 130 balls were distributed equally among 5 children. How many balls did each child get?
- (ii) There are 48 books in a school library. If 8 books are kept in each rack, how many racks are needed?
- (iii) 210 mangoes were placed equally in 7 baskets. How many mangoes will be placed in each basket?
- (iv) 636 toys were distributed equally among 6 children. How many toys will each child get?
- (v) 42 bananas were distributed equally in 7 plates. How many bananas will be placed on each plate?

18. Solve -

- (i) What number will be formed by decreasing 6 by one in the number 768?
- (ii) What number will be formed by increasing 4 by one in the number 345?
- (iii) What number will be formed by decreasing 9 by one in the number 891?
- (iv) What number will be formed by increasing 0 by one in the number 230?



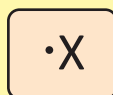
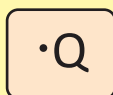
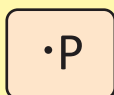
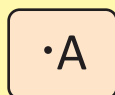
Let's discuss

One day, while sleeping, Geeta had a dream. In her dream, she found herself in an ancient library. There, she found a mathematics book. On the pages of the book, some geometric shapes were drawn.

Geeta started looking at the book carefully. On one page, a single point was drawn. Suddenly, that point began to glow. Slowly, a voice came from the point, "I am the smallest geometric shape." "Every shape begins with me. Without me, it is not possible to create any geometric shape."

Point

A point is the smallest geometric shape with no length, width, or height. It only represents a position. It is often represented by a small dot ($\bullet$).

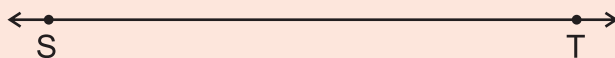


Here, 'A', 'P', 'Q', and 'X' represent a point.

On the next page of the book, she saw a straight line extended between two arrows. As soon as Geeta touched the line, she felt a cool breeze. The line began to speak, "I am the journey, the shortest and straightest path between two points. I am a symbol of stability and infinity that never stops."

Line

A line is a straight, infinite collection of points that extends infinitely in both directions. It has no fixed length. To represent it, arrows are used on both ends.

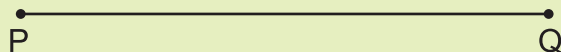


Here, ST is a line that passes through points S and T and extends infinitely in both directions.

Then Geeta saw a line segment with two distinct points at both ends. The line segment said in a calm and steady voice, "I am a boundary, a fixed distance, a measurable length. My beginning and end are fixed, and I represent the relationship between two points."

Line Segment -

A line segment is a part of a line that has two definite endpoints. It has a fixed length that can be measured.



Here, PQ is a line segment whose endpoints are P and Q.

Finally, Geeta saw a ray, one end of which was like a shining sun, and the other end had an arrow mark. The ray's voice was full of energy and enthusiasm, "I am direction, extending infinitely with a beginning. I am light that pierces through darkness and illuminates new paths."

Ray -

A ray is a part of a line that has a definite starting point but extends infinitely in the other direction. To represent it, a point is used at the starting point and an arrow in the other direction.



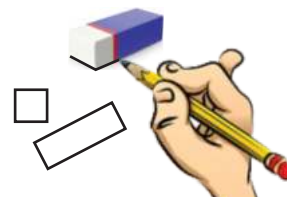
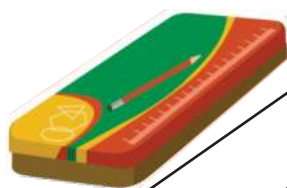
Here, XY is a ray whose starting point is X and it goes infinitely in the direction of Y.

From that day on, Geeta began to see mathematics from a new perspective. She saw a story in every shape, and whenever she was in trouble, she remembered the voices from that dream that reminded her of possibilities, journeys, boundaries, directions, and motivated her to move forward.

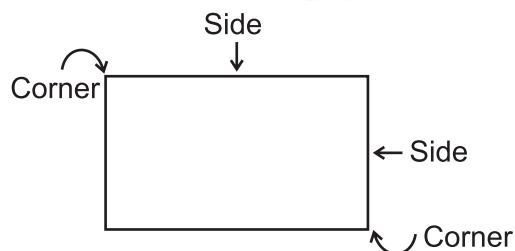
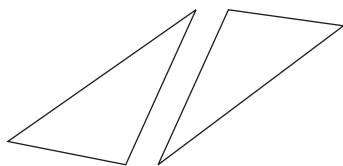
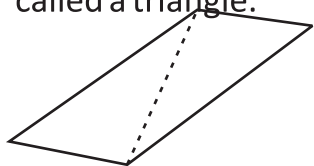


Let's Do It

The teacher will give each student a piece of paper and have them trace a rubber/ruler/geometry box. To trace, place the object on the paper and move the pencil around it. Let them trace different surfaces of the objects and cut out the raised shapes with scissors. (The teacher should help students, cut the shapes and supervise this activity.)

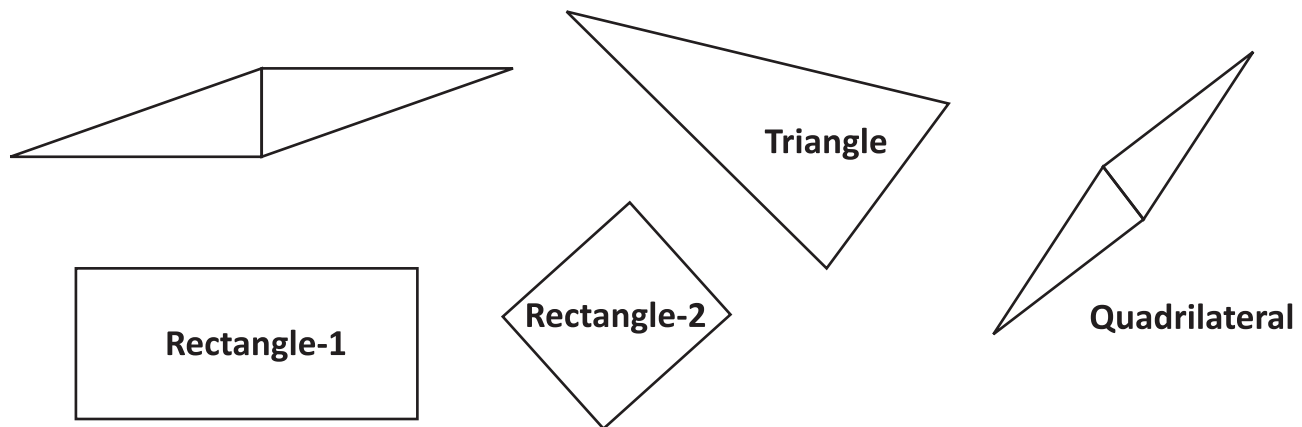


Now fold the four sided shape in the middle as shown in the picture. You will get a closed shape made of three corners and three sides. This is called a triangle.



A closed shape with four corners and four sides is called a quadrilateral.

Joining two triangular shapes forms a quadrilateral shape.



A triangle has three angles, and the rest of the shapes have four angles each.

Circle

Show children various round objects, such as coins, bangles, buttons, plates, etc.

What do all these objects have in common?

What shape is formed when you place a coin, bangle, button, etc., on paper and trace around it with a pencil?

Take a pencil and a string. Tie one end of the string to the pencil. Make a point on the paper. Ask them to place the other end of the string on the point and rotate the pencil around the point (keeping the string always taut).

Show the shape formed on the paper and tell them that it is a circle.

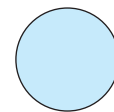


A circle is a set of points equidistant from a fixed point.

Center of the Circle - The fixed point where the end of the string was placed is called the center of the circle.

Ask children to trace various circular objects (like bangles, coins) and then fold them to find out where the lines meet when folded. That point will be the center of the circle.

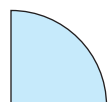
Radius of a Circle



Ask them to draw a straight line from the center of the circle to any point on the circle. This straight line is called the radius of the circle.

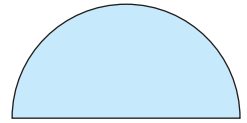
Ask children to draw different radii in the circles they have made and measure them. They will see that all radii are of the same length.

The line segment connecting the center of a circle to any point on the circle is called the radius of the circle.



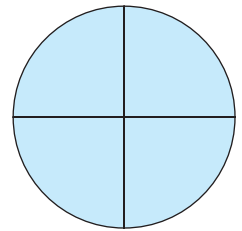
Diameter of a Circle -

Take a piece of circular paper. Fold it in such a way that one half completely covers the other half. Show the line formed by folding and explain that this line passes through the center of the circle and connects two points on the circle. This is called the diameter of the circle.



Ask children to draw diameters in the circular shapes they have made. Encourage them to measure the diameter and radius and find the relationship between them (the diameter is twice the radius).

The line segment that passes through the center of the circle and connects two points on the circle is called the diameter of the circle.



Ask children to draw circles of different radii. Ask them to draw and identify several radii and diameters in one circle. Ask them to imagine the center, radius, and diameter in real-life circular objects.

Shape Name	Number of Sides	Number of Angles	Characteristics
Triangle 	3 sides	3 angles	A closed shape with three sides.
Square 	4 sides	4 angles	All sides are equal. All angles are right angles.
Rectangle 	4 sides	4 angles	Opposite sides are equal. All angles are right angles.
Circle 	No sides	No angles	A circle is a round shape where all points are equidistant from the center.



Let's Solve

1. What is the difference between a rectangle and a triangle?
2. What is the difference between a rectangle and a circle?
3. What is the difference between a rectangle and a square

Three-Dimensional Shapes

The teacher brought two boxes into the classroom. The children thought there would be gifts or toys inside, but when they opened the boxes, they were empty. One was a watch box and the other was a shoe box.

First, the teacher showed the **watch box** from the front and asked, "What shape does this look like?"

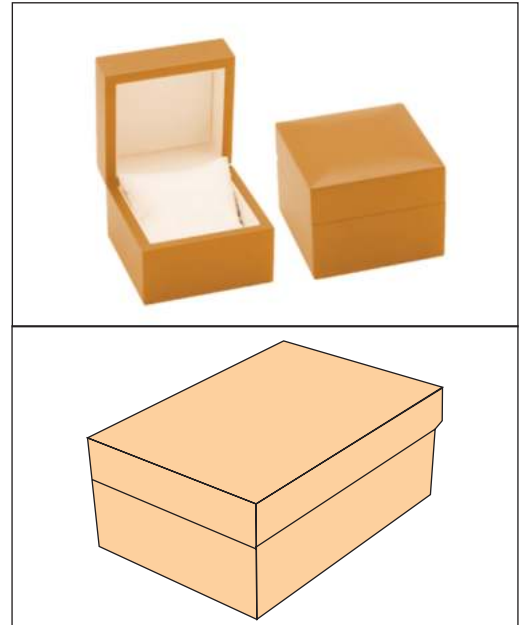
The children said, "It looks like a square."

The teacher said, "You recognized it correctly, but think, how is it different from a square?" One child replied, "Madam, it's thick."

The teacher happily said, "Absolutely correct."

A square is a two-dimensional shape that only has length and width, but a box is a three-dimensional shape that has length, width, and height.

And like a square, **all sides of this box are equal**. It is called a Cube."



Then the teacher picked up the shoe box and showed its front part.

The whole class said, "This looks like a rectangle, but it's also thick, like the first box."

The teacher said, "Yes, this is also a three-dimensional shape."

A rectangle only has length and width, but this box has length, width, and height. Its opposite sides are equal. We call it a Cuboid."

After that, the teacher turned both boxes over and over for the children to see and asked,

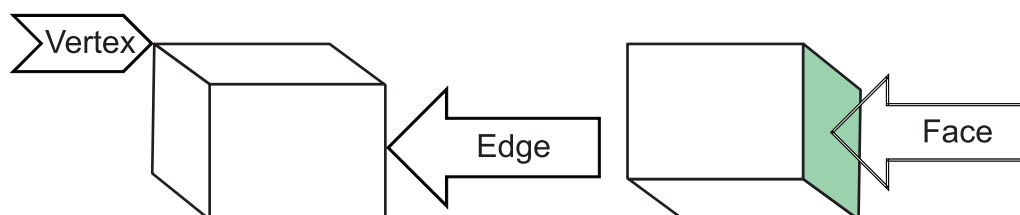
"Okay, how many edges, corners, and faces do a cube and a cuboid have?"

Satyam counted the boxes and answered:

The teacher explained, "Both cubes and cuboids

have the same number of corners, edges, and faces. The only difference is the length of the sides."

	Cube	Cuboid
Corners)	8	8
Edges	12	12
Faces	6	6

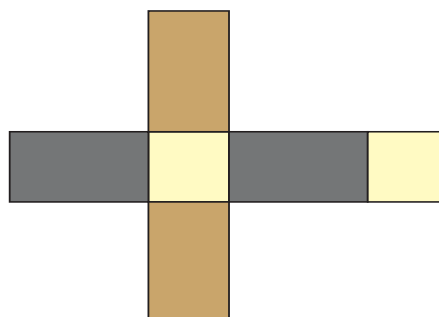
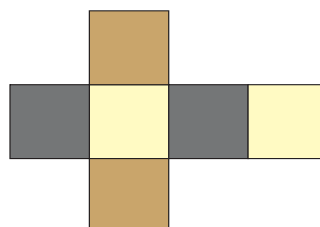


Let's open the chalk box and see -

Closed Shape



After Opening



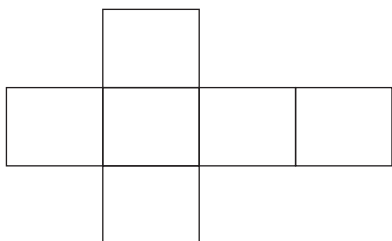
When a three-dimensional shape is opened, it forms a two-dimensional shape, and this is called the net of that shape.



Let's try

How to Make a Cube -

- Make 6 equal squares on paper (as shown in the picture).
- Now, cut these squares and fold them along the lines.
- Join all the parts by folding and sticking them together with glue or tape.



How to Make a Cuboid -

- Make 6 rectangular parts on paper (as shown in the picture) and fold them along the lines.
- Now cut all the pieces.
- Now fold and stick all the pieces.



After making the cube and cuboid, show their corners, edges, and faces.

You can also open a powder box and an ice cream cone to see how they look after opening.

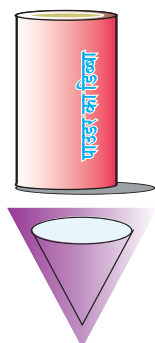
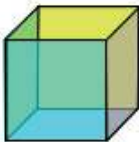
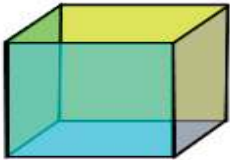


Image	Shape Name	Number of Faces	Characteristics
	Cube	6	A cube has six square faces. All its faces are equal in size and measurement, and three faces meet at each vertex. The length, width, and height of a cube are of the same measurement.
	Cuboid	6	A cuboid has six rectangular faces. Its opposite faces are equal in size and measurement. A cuboid has length, width, and height of different measurements. If the length, width, and height of a cuboid become equal, it becomes a cube.
	Cylinder	3	A cylinder has two circular surfaces (bases) connected by a curved surface. Both circular bases are of the same size and parallel to each other. The height of the cylinder is the perpendicular distance between the two circular surfaces.
	Cone	2	A cone has one circular surface (base) and one curved surface. The curved surface of the cone gradually narrows and meets at the apex.



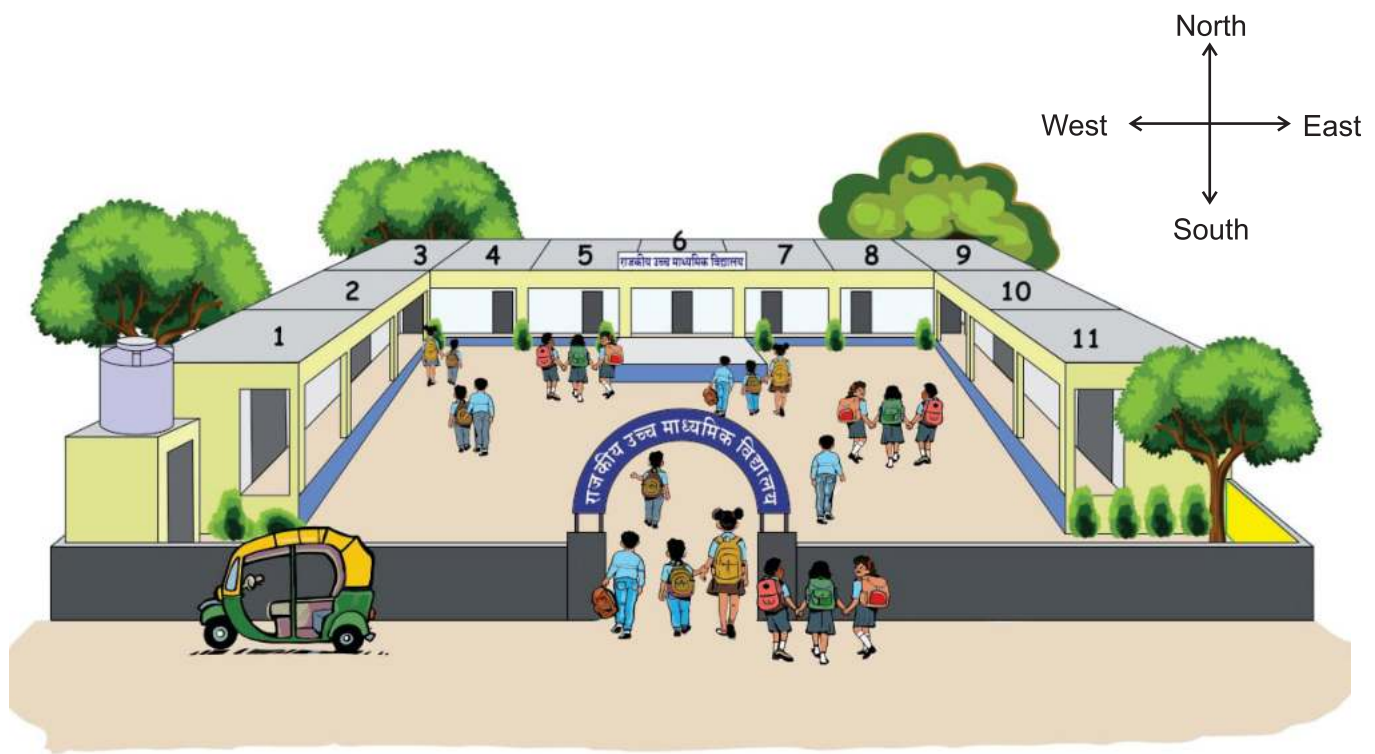
Let's Try

- Which shapes of tiles would be easiest to lay on the floor of a rectangular room - square, circle, or triangle? Why? Explain.
- Think and Answer** - If we only tile the floor with round tiles, will there be empty spaces in between? Why? Explain.



Let's discuss

This is a view of the school. Students are entering the school in the morning.

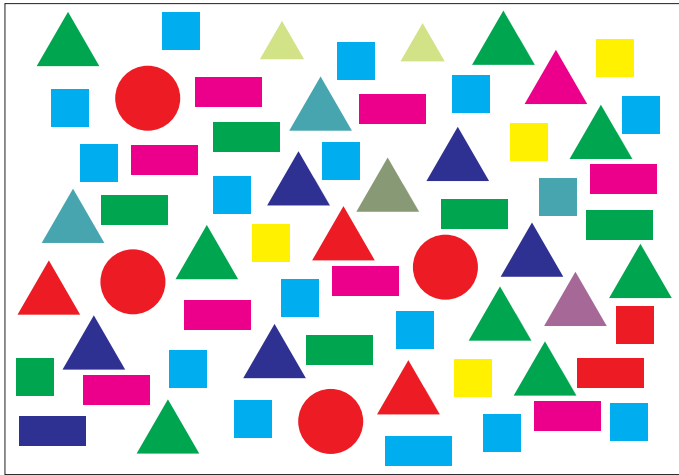


Look at the picture and answer -

- What all do you see?,
- In which direction does the main gate of the school building open?
- From the main gate of the school, which side is the water tank on? (Right/Left)
- How does the tank look when viewed from above the school building?
- In which direction does the door of classroom 2 open?

Practice Work

1. Identify the following shapes and write their number -



Triangle =

Rectangle =

Square =

Circle =

2. Answer the following questions -

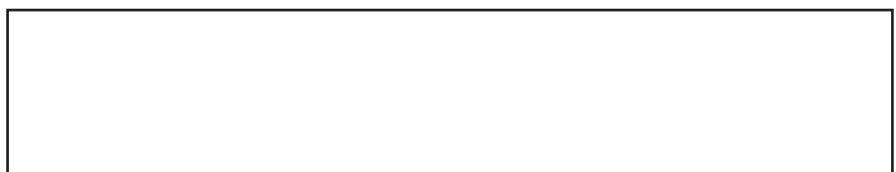
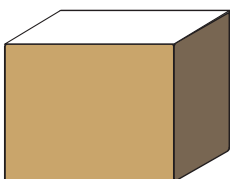


- (a) How many surfaces/faces does a matchbox have?
- (b) Does the surface of a matchbox look like a rectangle or a square?
- (c) Write the names of 4 objects whose surfaces are rectangular.
- (i) (ii) (iii) (iv)

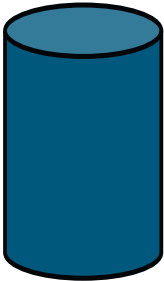
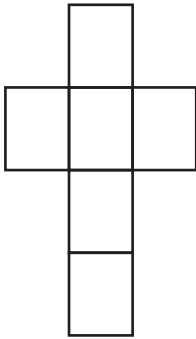
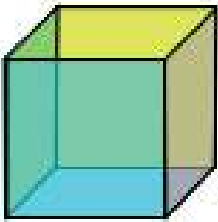
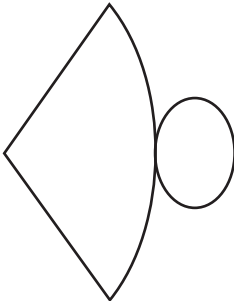
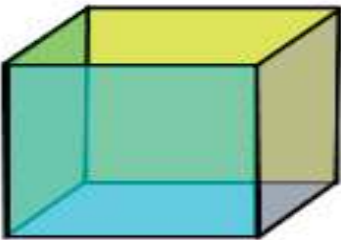
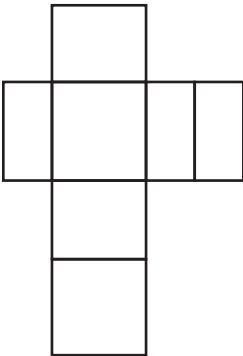
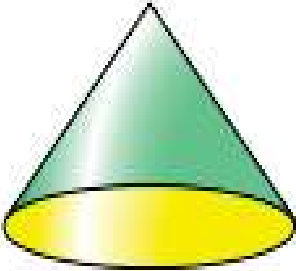
3. Fill in the blanks -

- (a) A closed box made of six equal sized surfaces is called a _____.
(cube/cuboid)
- (b) The surface of a brick looks like a _____. (rectangle/square)
- (c) A cuboid has _____ rectangles. (six/four)
- (d) In a cube, opposite surfaces are _____. (same/different)

4. A chalk box without a lid is made up of 5 surfaces. How will its surfaces look when opened? Draw a picture to show.



5. Match the given shapes with their names and nets.

Shape Name	Shape	Net of the Shape
Cuboid		
Cone		
Cube		
Cylinder		



Let's discuss

Hey! Look, by placing the mirror here, the picture is visible in full.

I will also place it and see. Oh yes, I can also see.

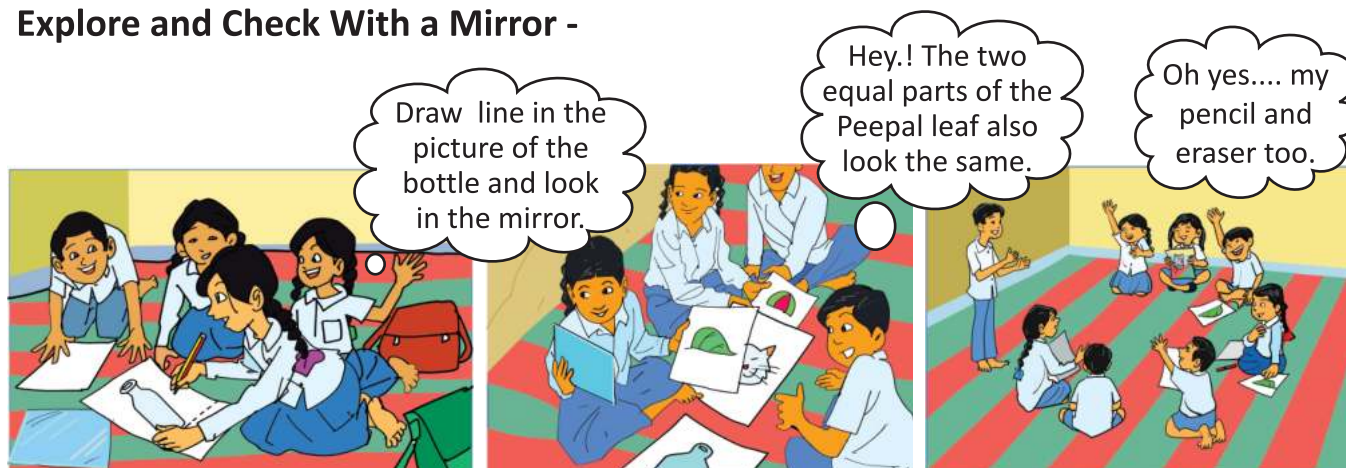


Hey look, the monkey's face is also fully visible.

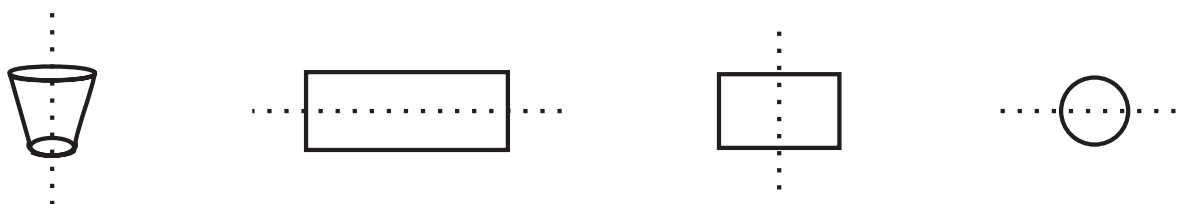
This is magic, sometimes the picture is big, sometimes small and sometimes the whole picture is visible.



Explore and Check With a Mirror -



We see many such objects in our surroundings which can be divided into two similar looking parts. As can be seen in the following pictures.



Here, both the parts obtained by drawing a line in this way are symmetrical to each other. This line is called a symmetry line.

Make a list of such objects around you along with your friends and put pictures of your favourite objects in the box and draw a line in such a way that both the parts look the same.



Ink dripped on the page of Kavita's exercise book. She closed the exercise book to dry the ink and opened it again. She showed it to her friends.



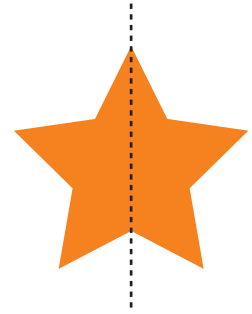
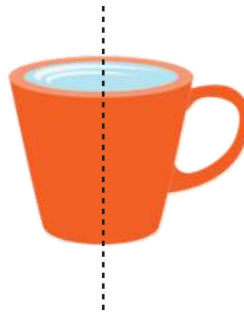
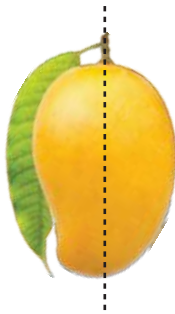
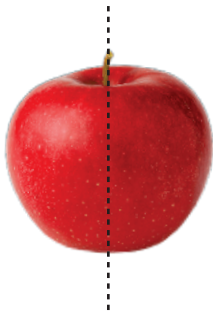
You Too Try Making It

Take a piece of paper. Fold it in half. Open it and drop a few drops of different colours on one half. Now fold the paper in half and press it in the middle of a book. Now open the paper and look at the picture you have made.



Try This Too -

Which of the pictures given below has a line of symmetry? Find out -



By placing a mirror on the symmetry line of a picture, that picture becomes complete.



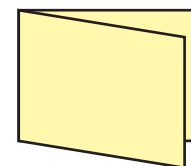
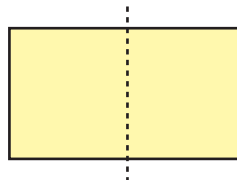
Two or More Symmetry Lines

You are familiar with rectangle, square and circular shapes. Let's see how many symmetry lines you can draw in them. First take a rectangular paper.

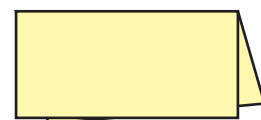
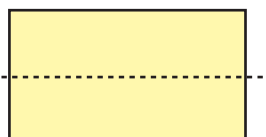
In how many ways can you fold it so that when folded, one surface covers the other surface completely?



Kavita folded it like this



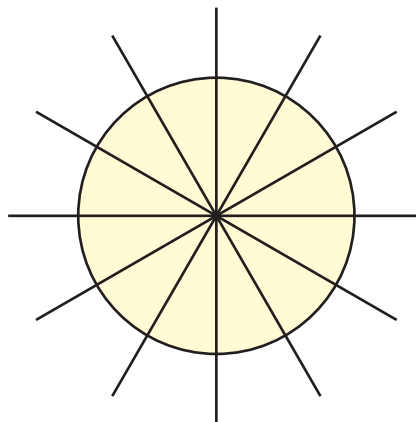
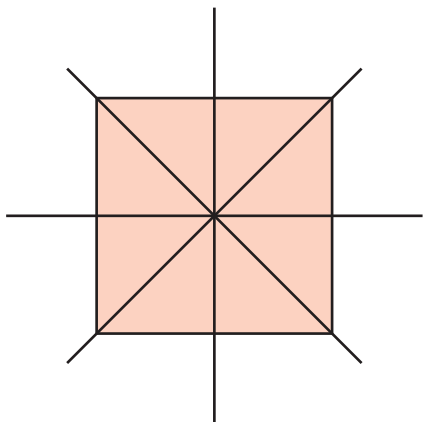
Tanmay folded it like this



You also take a rectangular paper and fold it. Can these two lines be called symmetry lines?

Yes, you thought right. Both these lines are symmetrical lines for rectangular paper and such figures are called symmetric figures.

Now take square and circular paper and find symmetrical lines in them.



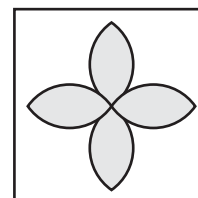
How many symmetrical lines did you find in the square paper?

Let's Find Out

Write some English letters in your exercise book and make their mirror images and match them -

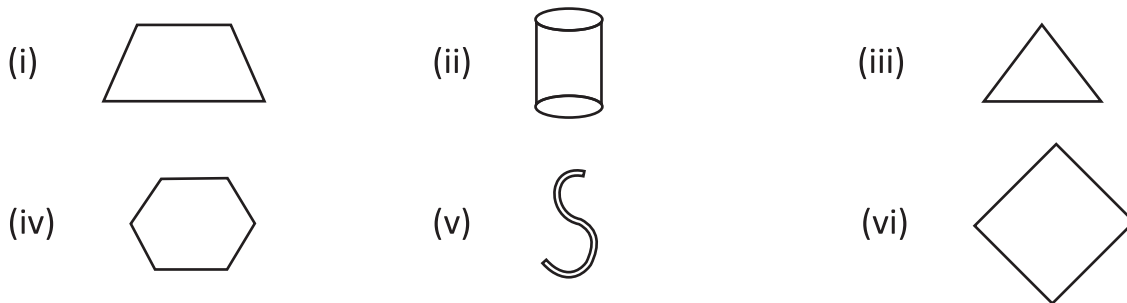
Letters	Mirror images
C	E
E	D
T	C
D	T

- Fold a square paper 4 times and cut any figure with scissors and identify the symmetrical figures formed when the paper is opened .

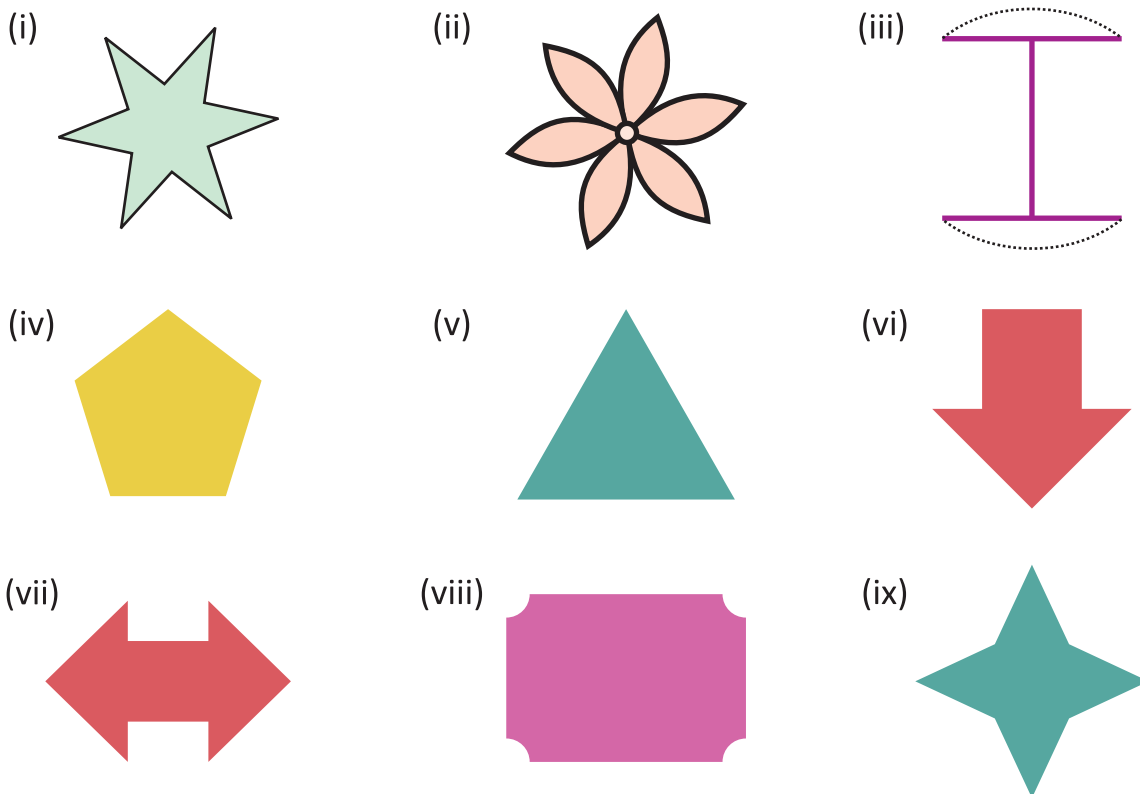


Practice Work

1. Draw the lines of symmetry in the following figures which are symmetrical -



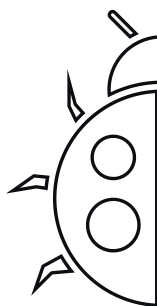
2. Draw the lines of symmetry in all the figures given below -



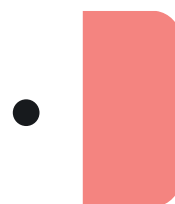
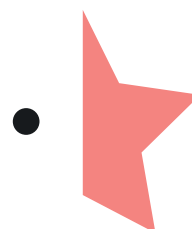
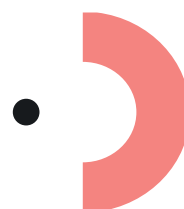
3. Find the lines of symmetry in the letters of the English alphabet and fill the table given below -

S.No,	Lines of symmetry	English alphabet
(i)	None	.....
(ii)	One	.....
(iii)	Two	.....
(iv)	Three or more than three	.....

4. Complete the pictures given below on the line of symmetry -



5. Match the symmetrical figure -





Let's Discuss

Today there is a very happy environment in the jungle. The jungle has been decorated with colourful flags all around. Sher Singh's son Simba has won the jungle elections with a huge number of votes. He has invited all the animals of the jungle to a feast. Sharbat has been kept in different vessels to welcome the animals. Hathi Dada comes to the feast dancing. Bear welcomed Hathi Dada and offered him a glass of sharbat. All the animals started laughing seeing this.



Answer the following -

1. Who offered the glass of sharbat to the elephant?
2. Why did all the animals start laughing when the glass of sharbat was offered to the elephant?
3. In which vessel do you drink sharbat and how much can you drink at one time?.....

Then the rabbit took a long burp. All the animals started laughing again. The squirrel said jokingly, "Hey! Such a long burp from two glasses of sherbet?" The parrot sitting on the tree laughed and said, "Brothers, 2 glasses means half a litre of sharbat". The peacock is drinking sharbat by inserting a pipe (straw) in the bottle.



How much Sherbet in Which Vessel?

S.No.	Name of the Vessel	Capacity of the Vessel / Quantity of Sherbet
1.	Tank	100 Litres
2.	Tub	50 Litres
3.	Bucket	10 Litres
4.	Jug	1½ Litre
5.	Bottle	1 Litre
6.	Bowl	500 millilitre or ½ litre
7.	Glass	250 millilitre or ¼ litre

Look at the given table and answer -

- How much sherbet will the peacock drink?Litres
- How much sherbet did the rabbit drink?..... Litres
- How many litres of sherbet can be stored in the jug?.....Litres

All the animals were enjoying the sherbet. Simba and his father Sher Singh came on the stage. Simba's roar made the peacock drop the sherbet bottle from his hand. The snake laughed and said, "Peacock brother! 2 bowls of sherbet have been wasted."

- Is the snake right? Explain.

.....

.....



The rabbit thinks in his mind that there are 20 members in my family. I want to give rose sherbet to everyone. If I take 3 jugs of water to make sherbet, will everyone get one glass of sherbet?

He calculates, one jug means 1 litre and half a litre. We can also call it three half-litres. 2 glasses of sherbet will be made from half a litre of water. 6 glasses of sherbet will be made from three half litres. Well! 6 members can drink sherbet from one jug.

Is the rabbit thinking right?

Let's Solve

- Convert millilitre units to litre units -

(i) $3000 \text{ millilitre} = 3000 \times \frac{1}{1000} \text{ litres}$
 $= 3 \text{ litres}$



To convert millilitre units to litre units, divide by 1000.

- Convert litre units to millilitre units -

(ii) $2 \text{ litres} = \dots\dots\dots \text{ millilitres}$
 $2 \text{ litres} = 1 \text{ litre} + 1 \text{ litre}$
 $= 1000 + 1000$
 $= 2000 \text{ millilitres or}$
 $= 2 \times 1000$
 $= 2000 \text{ millilitres}$



To convert litre units to millilitres, multiply by 1000.

Let's Discuss

- Everyone in Sonu's house is happy. Today, delicious dishes will be prepared. His maternal uncle is coming. Today, more milk is needed to cook rice pudding. Sonu asked for a 5 litre milk packet from the dairy owner. The dairy owner said that all the 5 litre milk packets have been sold today. I have 500 ml milk packets.



- How many packets of milk should Sonu buy from the dairy owner?
- The price of milk is ₹60 per liter. If Sonu gives ₹500 to the shopkeeper, how much money will the shopkeeper give in return?

Collect some packets of items around you. Read them and discuss among yourselves how much quantity of item is there in each packet?

- Leela caught cold after getting wet in the rain. The doctor gave her a bottle of 200 ml medicine and told her to drink 5 ml of medicine every morning and evening. How many days will Leela's medicine last? Days
- Aditya bought 2 litres of mustard oil for home. 50 ml of oil is used in his house every day. Answer -
 - How many millilitres of oil did Aditya buy?.....
 - Aditya's family uses more or less than 5 litres of oil in a month?

- (c) All the members of the family are ready to reduce the oil expenditure by half. What benefit will Aditya and his family get from this?.....

Water is Life

We all use water regularly. We also know that life is not possible without water, that is why everyone says, water is priceless. Every day we extract crores of litres of water from the ground through hand pumps, wells, tube wells. Due to this, the water in the ground is getting depleted.

How many litres of water is used in your house every day? Discuss with your family members and complete the table -

S.No.	Purpose	Approximately how many litres?
1.	Bathing	
2.	Washing clothes	
3.	Cooking and drinking	
4.	Washing the house	
5.	Trees	

- Look at the table and answer how many litres of water is used in your house every day?.....
- Can the water consumption be reduced? By what way and how many litres can be reduced?.....

Water Shortage in Scorching Heat

The Water Supply Department said that due to acute water shortage, water supply is not being done in the town. The government has installed two tube wells by spending ₹12 lakh. Currently, 600 litres of water is supplied to each tap connection every day.



This morning when the Water Supply Department was distributing water to the houses, I saw that the spouts on some taps were broken and some did not have any spouts at all. The tap water was flowing into the drain in vain.

- Can you tell how many litres of water would be wasted from these taps every day?.....
- If a person uses about 50 litres of water every day, then how many people's share of water will go waste every day?



Let's Solve

Example 1 - Add 20 litres 675 ml to 25 litres 750 ml.

Solution-

Litres	ml
25	750
+ 20	675
45 litres	1425 millilitres
+ 1 litres	(1000 ml + 425 ml)
46 litres	425 ml

Example 2 - Subtract 11 litres 525 ml from 15 litres.

Solution-

Litres	ml
14	1000
15	000
- 11	525
03 litres	475 ml

Example 3 -

At a petrol pump, three customers filled 3 litres 150 ml, 5 litres 450 ml and 6 litres 600 ml of petrol respectively, then how much petrol did all three fill in total?

Solution- Quantity of petrol in litres

litre

millilitre

Total

	3	150
	5	450
+	6	600 (1000 ml = 1 litre)
=	14 litre	1200 millilitre
+	1 litre	(1000 ml + 200 ml)
	15 litre	200 ml

Example 4 -

A water tank is filled with 1000 litres of water. If 10 buckets of 20 litres of water have been used from it, then how much water is left in the tank now?

Solution-

Total quantity of water in the tank

= 1000 litres

Quantity of water in 1 bucket

= 20 litres

Then total quantity of water in 10 buckets

= $10 \times 20 = 200$ litres

Hence total quantity of water remaining in the tank

= 1000 litres - 200 litres
= 800 litres

Practice Work

1. Match-



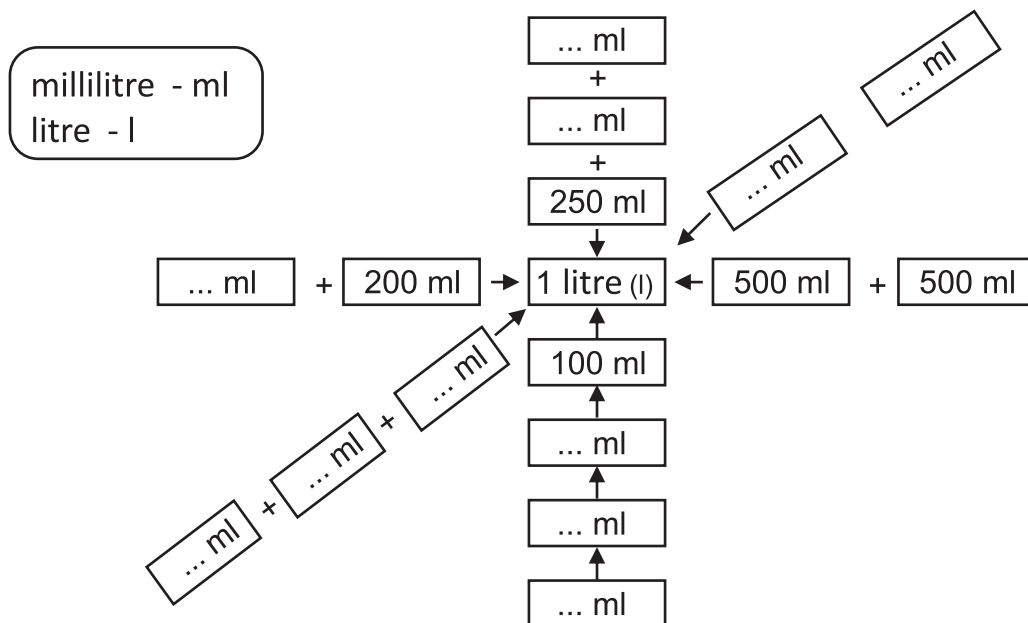
One and a Quarter litre $\frac{1}{4}$ लीटर

One litre $\frac{1}{2}$ लीटर

One fourth litre $1\frac{1}{4}$ लीटर

Half litre 1 लीटर

2. Make 1 litre by adding in different ways -



3. Fill in the blanks by proper conversion of units -

- (i) 4 litres =millilitres
 - (ii) 7 litres 250 millilitres = millilitres
 - (iii) 2 litres $\frac{1}{4}$ ml =millilitres
 - (iv) 550 ml + 200 ml +1250 ml = litres
 - (v) 2360 ml =litres.....ml
 - (vi) 3500 ml =litres
4. Anmol's grandmother brought 1 litre 500 ml goat milk, 4 litres 150 ml cow milk and 7 litres 750 ml buffalo milk. What is the total quantity of milk in Anmol's house?
5. A patient took 5 ml medicine from a 100 ml medicine bottle every morning and evening for 3 days. How much medicine is left in the bottle now?
6. A shopkeeper has 15 litres of oil in the first vessel, 12 litres 500 ml in the second vessel and 45 litres 250 ml in the third vessel. He fills the oil from all three vessels in an empty can. Tell how much oil is there in the can?
7. A milkman has 18 litres of milk. He sold 13 litres 500 ml of milk. How much milk is left with the milkman?
8. 2 barrels of oil contain 16 litres 500 ml and 18 litres of oil respectively. How many bottles of 500 ml can be filled from these two barrels?



Let's Discuss

Rahul likes the sticks used in Kulfi. He often plays with them. Today he brought some sticks to school in his bag. During the lunch break, he started playing with those sticks with his friend Pinku. Just then his friends Ganesh and Monu also came there.

Rahul: Look, I have arranged the sticks lengthwise.

Pinku: One, two, three... Hey! The length of the table is equal to 9 sticks.

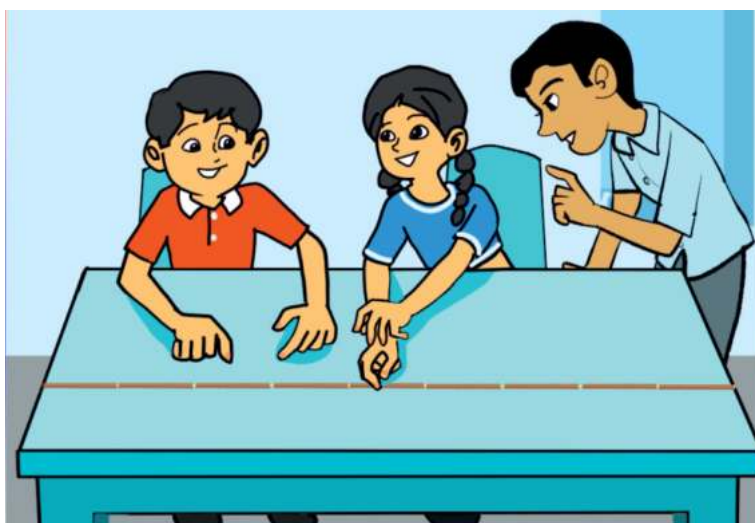
How many sticks will fit on the width of the table?.....

After arranging the sticks on the width of the table, they started arranging the sticks on the floor.

Monu: The length of this floor is equal to 15 sticks.

Ganesh: No-no, the length of the floor is equal to 14 sticks.

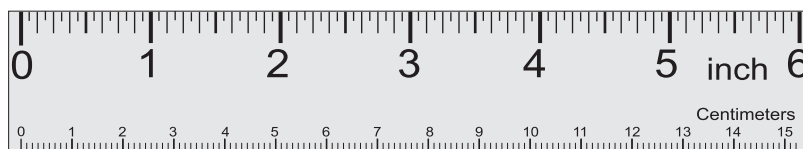
Can you tell whose estimate is correct between Ganesh and Monu? Discuss your reason with your friends and teacher.



Introduction to Scale

You must have given measurements to the tailor for stitching clothes. You must have seen the mason measuring length and breadth while constructing a house. We often measure the length of objects in our daily lives, such as the length of books, the length and breadth of a room, the length of a school bag or

the length of a wire. To measure these, we use inch tape, ribbon or scale. You must also have a scale with which you can measure the length. Your scale will be like this. Let's learn to read and use the scale-



This scale has segments from 0 to 15 on one side. Each segment is of one centimetre . On the other side, each big segment indicates an inch.



Let's Discuss

Can you answer -

1. This scale is of ...inches.
2. In the scale, the distance of one centimetre between 0 and 1 is divided into small segments. Can you answer, how many small segments are there between 0-1? Count them.
3. Count the small segments between centimetres and answer -

Number of small segments between 1& 2 =

Number of small segments between 3 &5 =

Number of small segments between 8 & 12 =

Number of small segments between 12 &13 =

Discuss with your friends and answer -

10 small segments = centimetres

20 small segments = centimetres

30 small segments = centimetres

90 small segments = centimetres

You Must Know-

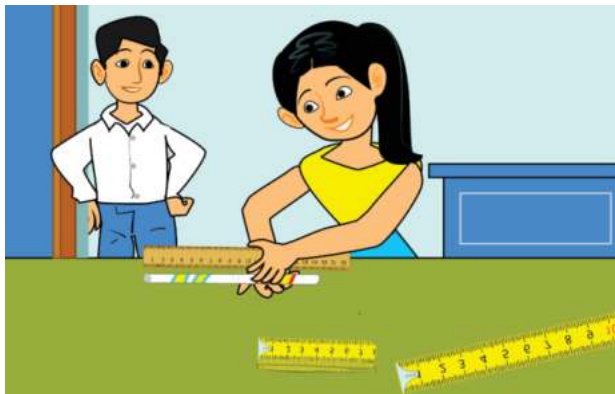
The distance between any two small segments of the small segments between a cm is called 1 millimetre. So there are 10 millimetres in 1 centimetre.



Let's Measure the Length with the Help of Scale

Monu measured the length of a straw (pipe) by placing it on the scale. After measuring the straw with the scale, he said, "Hey! The length of my straw is 9 cm."

1, 2, 3..... Hey! The length of my pencil is also 9 cm.

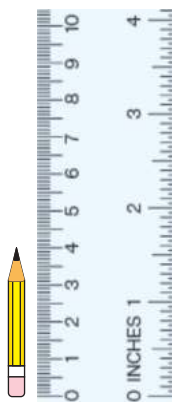


Hey! The straw is smaller than 9 cm.

Discuss with your friends and teacher whether Monu, Pinku, Nidhi and Ganesh are measuring correctly with the scale? How?

Hey! Nidhi has measured the straw in this way. Is the length of this straw also 9 cm?

Who is How Many Centimetre are these objects ?



Length of the pencil =..... cm



Length of the chalk =..... cm



Length of the flute=..... cm



Length of the straw =..... cm

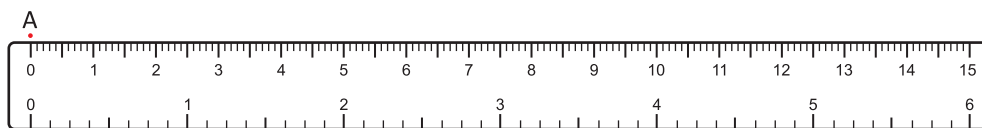
Measure the length of the following line segments with the help of a scale and write them down-

- (i) (ii) (iii)

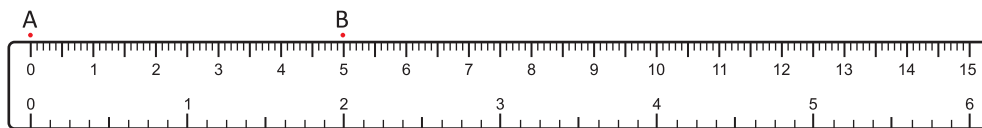
Drawing a Line Segment

To draw a line segment of the given measurement (assuming 5 cm) we work in the following steps -

1. Take a point 'A' -
2. Place a scale in such a way that the 0 mark of the scale is at point 'A'. As shown in the figure.



3. Put a point B at 5 cm



4. Join points A and B by moving the pencil along the scale -



5. AB is the desired line segment.

Let's Discuss

Fill the table given below while discussing with your friends –

Which objects are there in your class ?

S.No.	Name of the Object	Estimated Length	Actual Length

Find out their distance by asking your parents, grandparents and fill in the table -

S.No.	Name of the Place	Distance from Your House
1.	Grandmother's house	
2.	Your school	
3.	District Headquarters	

Metre and Kilometre

We measure the distance from one place to another in meters and kilometres. We measure the distance around school and friend's house in meters. We measure the distance from one village to another village or city in kilometres. Your parents and grandparents must have told you some distances in meters and some distances in kilometres. Let's see how long a meter and kilometre are.

The length of 100 centimetres is called 1 meter and the length of 1000 meters is called 1 kilometre.

With the help of a scale, take out a 100 cm long cloth strip from an old cloth. Measure with this cloth strip and answer -

1. The length of the classroom door isthan 1 meter. (less/more)
2. The length of the board is.....than 1 meter. (less/more)
3. Your friend's height isthan1 meter. (less/more)
4. The length of the table isthan 1 meter. (less/more)
5. The width of the table isthan1 meter. (less/more)
6. The height of the table isthan1 meter. (less/more)

Make an estimate and check it -

S.No.		Estimated Length (in metres)	Actual Length (in metres)
1.	Length of room		
2.	Length of veranda		
3.	Length of carpet		



Let's Try

1. Your grandmother's house is..... kilometres away. The distance of your house from your grandmother's house is..... metres.
2. The length of the board in your class is 1 metre 50 centimetres. What is the length of the board =centimetres
3. 5000 metres =..... kilometres.
4. 1600 metres kilometres andmetres
5. 5 kilometres 7 metres =metres



Let's Discuss

Archana is very happy today. She is going to Mount Abu from Jaipur for a trip with her grandparents. Archana has completed her preparations with her grandfather. At night she fell asleep thinking about Mount Abu and the route. While sitting in the bus in the morning, grandfather told her that Mount Abu is 500 kms from here. She started thinking that her grandmother's house is 50 kms away. When we go by bus, it takes us about 1 hour. How many hours will it take us to reach Mount Abu? Please help Archana solve her problem-

- If the time taken to cover a distance of 50 km is 1 hour then it takes 2 hours to cover kilometre.
- If the time taken to cover a distance of 200 km is... hours , then will reach..... kilometres = in 6 hours.
- 400 kms can be reached in.... hours then 500 kms can be reached in...hours.

Archana was very happy while travelling in the bus. The weather was pleasant. Archana was lost in seeing the objects outside the window. Grandfather was sitting on the seat next to her. Archana saw a white stone on the road on which something was written. Grandfather told that such stones are installed on every kilometre . The name of the city and the kilometre is written on them which tells us how many kilometres that city is from here. Grandfather told that now we have reached 100 kilometres away from our house.



Let's Try

How many kilometres is Abu Road from Archana's house?.....

How many hours will Archana take to reach Abu Road?

After reaching Abu Road, the driver and conductor told that the bus will stop here for 15 minutes. Grandfather said smilingly, Abu Road's Rabdi is famous and it is very tasty. After getting down from the bus, grandfather brings Rabdi for Archana. "Aha grandfather! Really Rabdi is very tasty."

As soon as they got out of Abu Road, Archana saw a green board on which the distance of major cities from there was written. Archana asked, "Grandfather, what does km mean here?" Grandfather told that we write kilometer in short form as km and centimetre as cm. Grandfather asked Archana, how will we write millimetre in short form? You help Archana –



Millimeter = ()

The conductor announced that passengers going to Mount Abu should come forward. Archana got down from the bus along with her grandfather and grandmother.

Practical Problems

Example 1- A tailor has 2 meters 30 cm cloth. He bought 1 meter 50 cm cloth more. How much cloth does he have in total?

Solution –

$$\begin{array}{r} 2 \text{ meters } 30 \text{ cm} \\ + 1 \text{ meter } 50 \text{ cm} \\ \hline 3 \text{ meters } 80 \text{ cm} \end{array}$$

Example 2- A road is 5 kilometres 200 meters long and another road is 3 kilometres 700 meters long. What is the total length of both the roads?

Solution –

$$\begin{array}{r} 5 \text{ meters } 200 \text{ cm} \\ + 3 \text{ meter } 700 \text{ cm} \\ \hline 8 \text{ meters } 900 \text{ cm} \end{array}$$

Example 3- A rope was 5 metres 75 cm long. 2 metres 25 cm were cut from it. How long is the rope left now?

Solution –

$$\begin{array}{r} 5 \text{ meters } 75 \text{ cm} \\ - 2 \text{ meter } 25 \text{ cm} \\ \hline 3 \text{ meters } 50 \text{ cm} \end{array}$$

Example 5- If a table is 1 m 50 cm long, then what will be the total length of 3 such tables put together?

Solution –

$$\begin{array}{r} 1 \text{ meters } 50 \text{ cm} \\ \quad \times 3 \\ \hline 3 \text{ meters } 150 \text{ cm} \end{array}$$

(Since 100 cm = 1 m, so 150 cm = 1 m 50 cm)

So 3 m + 1 m 50 cm = 4 m 50 cm.

Example 6- If 3 cars together covered a distance of 15 km 600 m and each car covered an equal distance, then how much distance did each car cover?

Solution– 15 km ÷ 3 = 5 km

And 600 m ÷ 3 = 200 m

So each car covered a distance of 5 km 200 m

You Must Know

1 meter = 100 centimetre

1 kilometres = 1000 meter

1 centimetres = 10 millimetre

1 meter = 100 × 10 millimetre

1 kilometre = 1000 × 100 centimetre

1 centimetres = 1/100 meter = 1 meter ÷ 100

1 meter = 1/1000 kilometre = 1 kilometre ÷ 1000

1 millimetre = 1/10 centimetre = 1 centimetre ÷ 10

Example 4- The distance between one village and another is 12 kilometres 500 metres. If you have covered 7 kilometres 300 metres, then how much distance do you have to still cover?

Solution –

$$\begin{array}{r} 12 \text{ km } 500 \text{ m} \\ - 7 \text{ km } 300 \text{ m} \\ \hline 5 \text{ km } 200 \text{ m} \end{array}$$

Practice Work

1. Fill in the blanks by proper conversion of units-

- (1) 8 centimetre = $8 \times \dots\dots$ millimetres = $\dots\dots$ millimetres
 - (2) 65 millimetres = $\dots\dots$ cm $\dots\dots$ millimetre
 - (3) 9 meters = $9 \times$ centimetres = $\dots\dots$ centimetres
 - (4) 400 centimetres = $400 \div \dots\dots$ meters = $\dots\dots$ meters
 - (5) 5 kilometres = $5 \times \dots\dots$ meters = $\dots\dots$ meters
 - (6) 7000 meters = $7000 \div \dots\dots$ kilometres = $\dots\dots$ kilometre
 - (7) 2475 meters $\dots\dots$ kilometres = $\dots\dots$ meters
2. The distance from Udaipur to Ajmer is 263 kilometres and the distance from Ajmer to Kuchaman is 104 kilometers, so what is the distance between Kuchaman and Udaipur?
 3. To stitch a pant, 1 meter 20 cm cloth is required. Find the length of the remaining cloth after cutting cloth for 15 pants from a lot of 28 m cloth.
 4. A rope of 28 m length is to be cut into 8 equal pieces. Find the length of each piece.
 5. A rope is 3 m long. Rani cuts a piece of 1 m 5 cm from that rope. Write the length of the remaining rope in metres and centimetres.
 6. The distance between two cities is 185 km. A bus has covered a distance of 95 km. How much distance does the bus have to cover now?
 7. A tailor has 10 m cloth. He has to stitch kurtas for 3 children from it. If 2 m 30 cm cloth is required for one kurta, then how much cloth will be left with the tailor after making all the three kurtas?
 8. An earthworm first moves forward 25 mm, then turns right 18 mm and then moves forward 50 mm. What is the distance covered by the earthworm?
 9. A runner is running on a 600 meter track. If he takes 3 complete rounds of the track, then how many km will he run?
 10. Draw line segments with the help of a scale -
 - (1) 4 cm
 - (2) 9 cm
 - (3) 6 cm
 - (4) 11 cm



Let's Discuss

One day the Mathematics teacher put a challenge in the class. He said that whoever answer the correct name of the heaviest vegetable will be given a prize. All the children started searching for the heaviest vegetable in their homes, fields and market.

Raju saw a big gourd in his field. He thought that gourd is the heaviest vegetable.

Kiran's father brought a big jackfruit home. Kiran tried to lift it but it was very heavy. Kiran thought that jackfruit is the heaviest vegetable. Surendra saw a very big pumpkin in the vegetable market. He thought that there cannot be a vegetable bigger than this.

The next day all the students reached the class with curiosity. First of all Raju told that gourd is the heaviest. Then Surendra denied saying that pumpkin is heavier than gourd. Then Kiran said that jackfruit is the heaviest.

In this way all the children told about their heaviest vegetables.

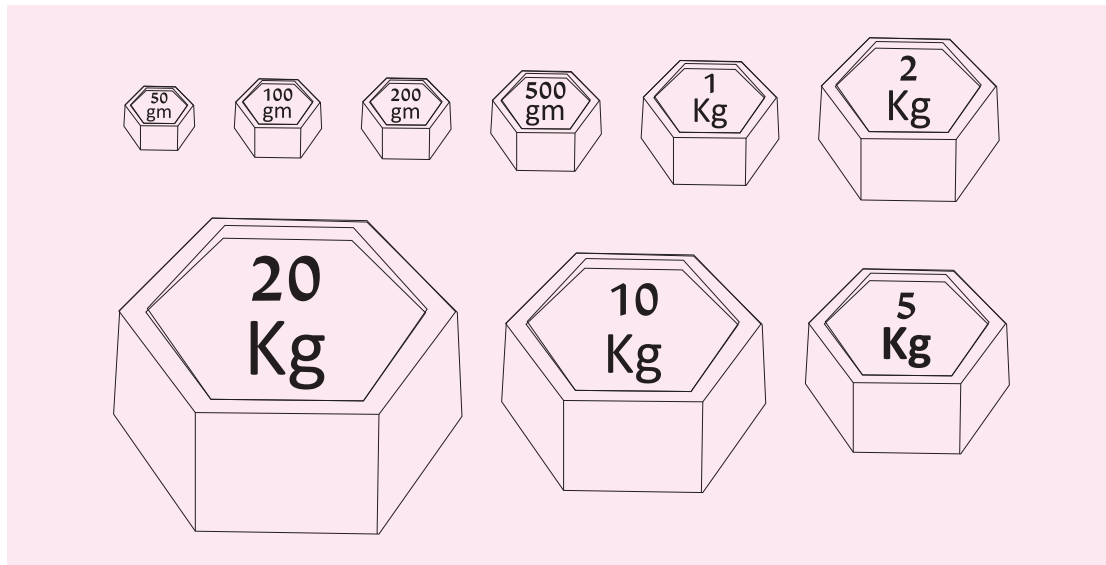
The teacher told Surendra that his vegetable was the heaviest vegetable and gave him a prize.

The teacher told that the heaviness of an object cannot be determined just by looking at its length and size. For this, the weight of different objects has to be compared. Different standard units are used to measure weight.

The standard units of weight are milligram , gram , Kilogram, Quintal, Ton etc.



Weights Used to Measure Weight



Nowadays digital balance is also used for weighing.

Which of these methods can be adopted to weigh 15 kg?

You Should Know -

Kilogram (kg): It is the main unit of weight.

1 Kilogram = 1000 Grams

Gram (gm): It is a small unit of weight.

1 Gram = 1000 Milligrams

Think and answer -

1. Which standard units are used to measure weight?
2. What is the use of a scale?
3. How will you compare the weight of two objects using a scale?

Conversion of Standard Units of Weight

Conversion from Gram to Kilogram

1 Kilogram = 1000 Grams

Eg. 500 Grams = 0.5 Kilogram

Conversion from Milligram to Gram

1 Gram = 1000 Milligrams

Eg. 500 Milligrams = 0.5 Gram

Conversion from Kilogram to Gram

1 Gram = 0.001 Kilogram

Eg. 2 Kilograms = 2000 Grams

Conversion from Gram to Milligram

1 Milligram = 0.001 Gram

Eg. 2 Grams = 2000 Milligrams



Let's Try

1. How many kilograms are there in 1500 grams?
2. How many grams are there in 2 kilograms?
3. A fruit shop has 5 kg of apples. If the weight of an apple is 200 grams, then how many apples are there in the shop?
4. A vessel weighs 500 grams. If we want to convert it into kilograms, then what will be the weight of the vessel in kilograms?

Addition and Subtraction of Units of Weight

Just like length, similar units of weight are also added and subtracted. We add and subtract just like ordinary numbers.

Example 1 : Add -

(i) 9 kg 650 grams + 2 kg 150 grams

Kg	Gram
9	650
+ 2	150
11	800

(ii) 8 kg 550 grams + 1 kg 250 grams

Kg	Gram
8	550
+ 1	250
9	800

Example 2 : Subtract -

(i) 6 kg 450 grams - 1 kg 150 grams

Kg	Gram
6	450
- 1	150
5	300

(ii) 7 kg 850 grams - 3 kg 350 grams

Kg	Gram
7	850
- 3	350
4	500

Example 3 : Tanmay bought 25 kg 250 grams of onions and 30 kg 500 grams of potatoes. How much vegetables did he buy in total?

Solution -

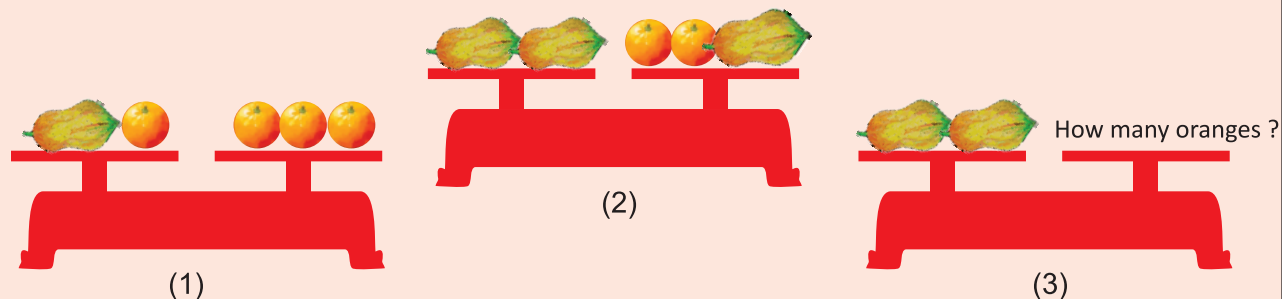
Kg	Gram
25	250
+ 30	500
55	750

Total vegetables bought = 55 kg 750 grams

Riddle 1 : How Many Oranges?

All oranges weigh the same. Two papayas also weigh the same. The weight on the first and second scale is the same.

How many oranges will be needed to balance the third scale?



Riddle 2 : Box of Fruits

A box contains 12 apples, 8 bananas and 4 mangoes. If you want to divide these fruits equally into 4 bags then how many fruits will be there in each bag?

Solution : First, add the total number of fruits: $12 + 8 + 4 = 24$

Then divide this number by 4: $24 \div 4 = 6$

So each bag will contain 6 fruits.

Riddle 3 : Pot of Water

A pot contains 18 litres of water. If you want to divide this water equally into 6 pots then how much water will be there in each pot?

Riddle 4 : Box of Sweets

There are 20 laddoos in a box. Each laddoo weighs 50 grams. How many kilograms of laddoos are there in that box?

Solution: Multiply the total weight of laddoos by the number of laddoos –

$20 \times 50 = 1000$ grams (1 kilogram)

Riddle 5 : Magic Square

Magic square is a square in which the numbers are arranged in such a way that the sum of the numbers in each row, column and diagonal is the same.

4	9	2
3	5	7
8	1	6

In this magic square the sum of the numbers in each row, column and diagonal is 15.

Practice Work

1. How many grams are there in 1 kilogram?

- (a) 100 grams
- (b) 1 gram
- (c) 1000 grams
- (d) 10 grams

2. How many grams are equal to 500 milligrams ?

- (a) 0.5 grams
- (b) 50 grams
- (c) 500 grams
- (d) 5 grams

3. What is the difference between kilogram and gram?

- (a) Kilogram is larger than gram.
- (b) Gram is larger than kilogram.
- (c) Both have no relation.
- (d) Both are the same.

4. What is milligram used to measure?

- (a) To measure weight
- (b) To measure time
- (c) To measure temperature
- (d) To measure length

5. Convert 250 milligrams into grams.

6. Convert 1000 grams into kilograms.

7. The weight of a book is 250 grams. What will be the weight of the book in milligrams?

8. A shopkeeper gives 15 kg sugar, 5 kg rice and 2 kg pulses to a customer. Then how much total weight of goods does the customer buy?

9. How many 100 gram weights will a shopkeeper put in the scale to weigh an item of 400 grams?

10. A customer leaves a shop with a bag of 5 kg sugar. On the way, the bag bursts and 2 kg sugar spills. How many kg sugar will remain in the bag?

11. If there are 50 kg wheat in a sack, then how many small bags can be made from 5 kg wheat?

12. If 20 kg grapes are kept equally in 5 boxes, then how many kg grapes will be there in each box?

We Learnt and Understood - 3



1. How many centimetres are there in one metre?
(i) 10 cm (ii) 100 cm (iii) 1000 cm (iv) 1 cm ()
2. How many metres are there in one kilometre?
(i) 100 metres (ii) 10 metre (iii) 1000 metres (iv) None of these ()
3. How many kilograms are there in one quintal?
(i) 1000 kg (ii) 50 kg (iii) 10 kg (iv) 100 kg ()
4. How many millilitres are there in one litre?
(i) 10 ml (ii) 100 ml (iii) 1000 ml (iv) None of these ()
5. Write the names of three objects of the following shapes -
(i) Cuboid shape
(ii) Conical shape
(iii) Cylinder shape

6. Fill in the following table-

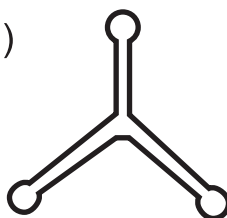
Name of Shape	Number of Vertices	Number of Faces	Number of Edges
Cube			
Cylinder			
Cuboid			
Cone			

7. Draw all the symmetry lines of the shapes given below -

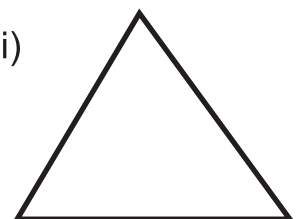
(i)



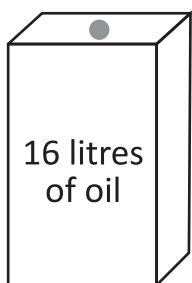
(ii)



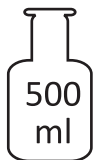
(iii)



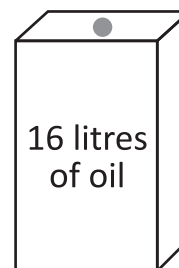
8. Fill in the blanks -



How many 1 litre bottles can be filled from an oil barrel?



How many 500 ml bottles can be filled from an oil barrel?



9. Match -

- | | |
|---------------------|---------------------|
| a. 3 litres 725 ml | (i) 14.500 litres |
| b. 30 litres 725 ml | (ii) 8685 ml |
| c. 8.685 litres | (iii) 30.725 litres |
| d. 80685 ml | (iv) 3725 ml |
| e. 1.450 litres | (v) 80.685 litres |
| f. 14500 ml | (vi) 1 litre 450 ml |

10. Names of some shapes are given below. For each shape state whether it has mirror symmetry. If yes, then draw the figure & draw the line of symmetry.

- | | |
|-------------------------------|---------------------------------------|
| (i) A square | (ii) A rectangle that is not a square |
| (iii) An equilateral triangle | (iv) A scalene triangle |
| (v) A circle | (vi) Letter 'H' |

11. An ant starts walking from point A and passes through the following path - 5 cm straight towards east, then 3 cm straight towards north, then 5 cm straight towards west and finally 3 cm straight towards south.

- (i) What is the total distance covered by the ant?
- (ii) How far is the ant now from the starting point A and in which direction?

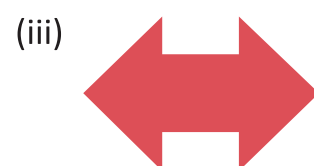
12. Solve the following -

- (i) 4 kg = gram
- (ii) 6 kg = gram
- (iii) 3000 grams = kilogram
- (iv) 4000 grams = kilogram
- (v) 6750 grams = kilogram

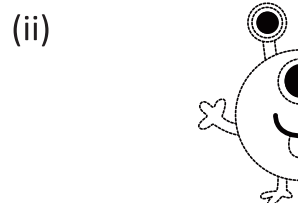
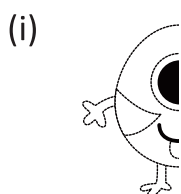
13. Solve the following -

- (i) Nidhi bought 2 kg potatoes, 500 grams tomatoes, 750 grams green chillies, 1 kg. 500 grams bottle gourd and 1 kg round gourd from a vegetable shop. So tell how much vegetables did Nidhi buy in total?
- (ii) Sanjay bought 10 kg sugar from the shop but some sugar fell out due to the bag tearing on the way. On weighing at home, it was found that now he has 6 kg. 350 grams of sugar left. So tell how much sugar is less?
- (iii) Rahul bought 40 kg tomatoes and 10 kg potatoes. Out of that 3 kg 500 grams of tomatoes got rotten. So now how many tomatoes are left in total?

14. Draw the lines of symmetry in those figures which are symmetrical -



15. Complete the figures given below on the lines of symmetry -





Let's Discuss

The teacher asked the children to circle their birthdates on the calendar in the classroom if their birthday falls in that month.

Anushka made a circle on the 18th date.

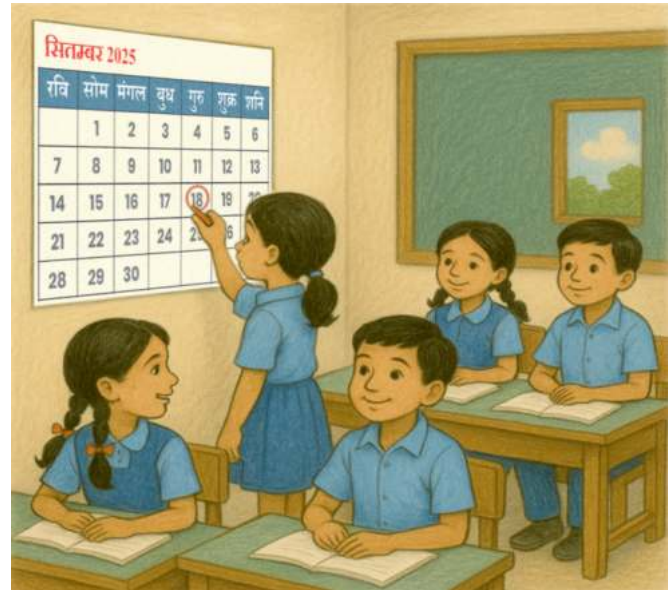
Shyam said, "Today is 1st September. How many days are left for your birthday?"

Anushka: "My birthday will fall afterdays, but tell me on which day is my birthday?"

Shyam: On Thursday

Manoj made a circle on the 22nd date.

Can you tell on which day is Manoj's birthday?



January

Sun	Mon	Tue	Wed	Th	Fri	Sat
			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	

February

Sun	Mon	Tue	Wed	Th	Fri	Sat
						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	

March

Sun	Mon	Tue	Wed	Th	Fri	Sat
						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					

April

Sun	Mon	Tue	Wed	Th	Fri	Sat
		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			

May

Sun	Mon	Tue	Wed	Th	Fri	Sat
				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

June

Sun	Mon	Tue	Wed	Th	Fri	Sat
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					

July

Sun	Mon	Tue	Wed	Th	Fri	Sat
		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		

August

Sun	Mon	Tue	Wed	Th	Fri	Sat
						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					

September

Sun	Mon	Tue	Wed	Th	Fri	Sat
	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				

October

Sun	Mon	Tue	Wed	Th	Fri	Sat
			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	

November

Sun	Mon	Tue	Wed	Th	Fri	Sat
						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						

December

Sun	Mon	Tue	Wed	Th	Fri	Sat
	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			

Let's Solve

Looking at the given calendar, write the names of 12 months-

S.No.	Name of the Month

S.No.	Name of the Month

Make a chart of the month, date and day of your and your classmates' birthdays-

S.No.	Name of Classmate	Date of Birth	Day

You Should Know -

Vikram Samvat is the Indian calendar which starts from Chaitra month. The names of the months of the Indian calendar are as follows-

Chaitra, Vaishakh, Jyeshtha, Ashadha, Shravan, Bhadrapad, Ashwin, Kartik, Margashirsha, Paush, Magh and Phalgun.



Let's Discuss

How many days are there in each month?

Manoj : 30 days

Did Manoj give the correct answer? Let's Find Out -

In the 12 months of the calendar (Gregorian), all the months do not have the same number of days.

Day	Month
31	January, March, May, July, August, October, December
30	April, June, September, November
28/29	February (Leap year has 29 days)

There are 365 days in a year but 366 days in a leap year. Generally, leap year falls after every four years. Years which are divisible by four are called leap years but a century year is a leap year only when it is divisible by 400.

How many days will February have in the year 2028?

Understanding of Day, Week, Month-

Can you answer that if 5th April is Tuesday then on which date will the next Tuesday come?

On adding 7 to any day, the same day is obtained again. For eg. If 5th is Tuesday then $5 + 7 = 12$, so 12th April will be Tuesday.

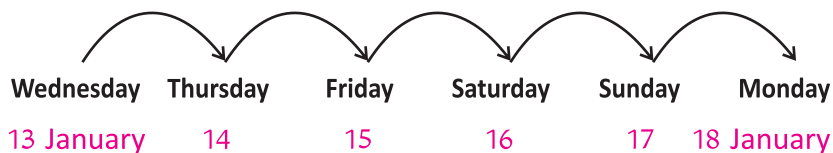
There are 7 days in a week - Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday.

Day	Date
Tuesday	5
Tuesday	$5 + 7 = 12$
Tuesday	$12 + 7 = 19$
Tuesday	$19 + 7 = 26$

There are four weeks in a month

Day	Date
Wednesday	13 January
	18 January
	22 January
	29 January

If 13th January is Wednesday then which day will be on 18th January?



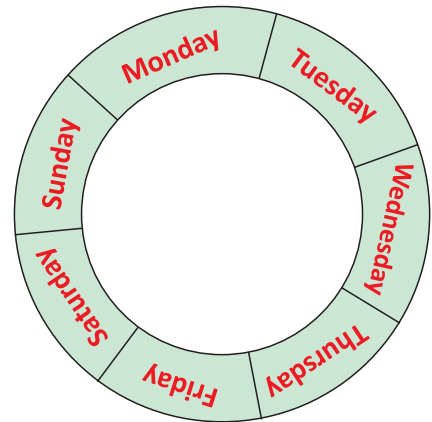
If 13th January is Wednesday, then 18th January will be Monday.

Fortnight - In the Indian almanac, half of a month is called fortnight. There are two fortnights in a lunar month -

Shukla Paksha and Krishna Paksha. Each fortnight is about 15 days. Thus, there are about 30 days in a lunar month.

Days of the Week-

- If 6th December is Tuesday, then what day will it be on 9th December?
- Neha's birthday is on Wednesday, 19th December and Neha is 4 days older than Shweta, then on which day was Shweta born?



Nidhi wrote the names of the months as follows - December, February, March, June, April, January, November, May, July, September, August and October.

Did Nidhi not write the names of the months correctly?

(Nidhi wrote the names correctly but not in correct order.)

Write the names of the months in the correct order.



Let's Solve

- Which is the first month of the year?
- Which is the last month of the year?
- In which month does Independence Day fall?
- Which is the seventh month of the year?
- Which month comes before June?
- Which months have 31 days?
- Which month has the least number of days?
- In which month does Gandhi Jayanti fall ?



Let's Discuss

Neha : Geeta, when is your birthday?

Geeta: My birthday is on 5th March.

Neha: What is your date of birth?

Geeta: My date of birth is 25-03-2017.

Neha : What are the year, month and day in this?

Geeta: In this, 25 is the day (Date), 03 is the month and 2017 is the year.

Neha : How old are you?

Gita : My age is years.

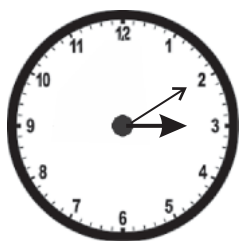
Measures of Time

Several units are used to measure time.

- There are 365 days in a year.
- Week- There are 7 days in a week.
- Hour- There are 60 minutes in an hour.
- Month- There are 12 months in a year.
- Day- There are 24 hours in a day.
- Minute- There are 60 seconds in a minute.

Checking Time In A Clock

The dial of a clock has numbers written from 1 to 12 . There are 5 equal parts between two numbers i.e. $12 \times 5 = 60$ equal parts. Generally it has two hands. One big hand and one small hand. The small hand indicates hours while the big hand indicates minutes.

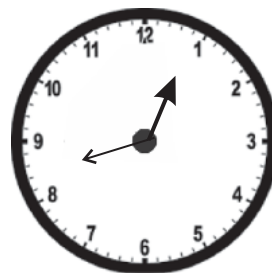
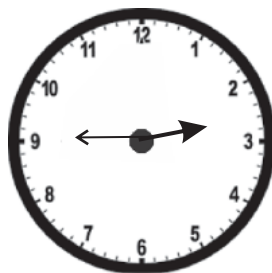
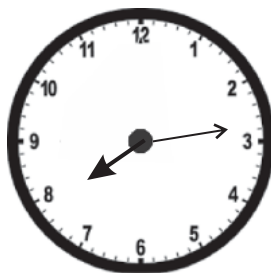
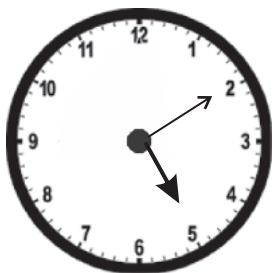


The hour (small) hand has crossed the number 3, means it is 3 o'clock and the minute (big) hand is at number 2, means it is showing the time of $2 \times 5 = 10$ minutes i.e. this clock is showing the time of 3 o'clock 10 minutes.



Let's Solve

Find out the time by looking at the clocks given below -



It also has a third hand which moves the fastest and indicates seconds.

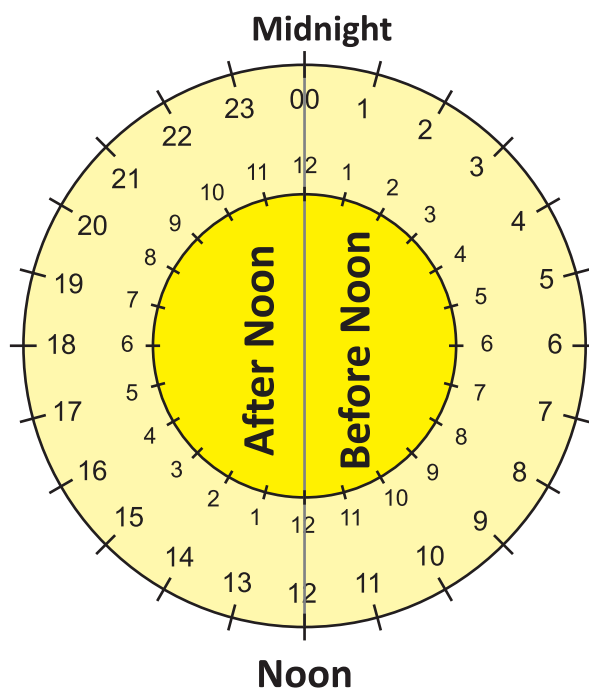
Forenoon And Afternoon Time

There are 24 hours in a day. The total time of 24 hours from 12:00 midnight of one day to midnight of the next day is called a full day.

The time from 12:00 midnight to 12:00 noon is expressed as Ante Meridiam (a.m.) and the time from 12:00 noon to 12:00 midnight is expressed as Post Meridiam (p.m.)

12 Hour Clock and 24 Hour Clock (Train/Bus Timings)

12 Hour Clock	24 Hour Clock
12:00 midnight	00:00 hrs.
4:00 a.m.	4:00 hrs.
11:00 a.m.	11:00 hrs.
12:00 p.m.	12:00 hrs.
04:00 p.m.	16:00 hrs.
08:00 p.m.	20:00 hrs.
11:00 p.m.	23:00 hrs.



Let's Try

Convert the given time in 24 hour clock time -

- (i) 10:45 a.m. (ii) 11:30p.m.
 (iii) 03:50 a.m. (iv) 03:50p.m.



Let's Discuss

Suku loved puzzles. He always tried to solve puzzles with his friends.

One day, a magician came to Suku's school. The magician asked Suku a puzzle.

"If I break a pencil twice then how many pieces will it be?" and said "If you answer this puzzle then I will give you a magic book."

Suku listened to the puzzle carefully, thought and after thinking immediately answered that there would be 3 pieces. The magician was very happy and he gave the magic book to Suku which had many puzzles.



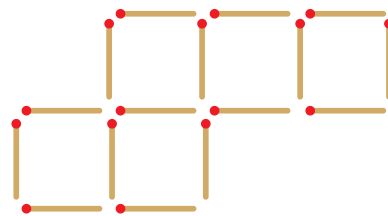
Add-

(i)	hr.	min	(ii)	hr.	min
	1	20		3	45
	+ 3	25		+ 3	15
	<u>4</u>	<u>45</u>		<u>6</u>	<u>60</u>
				7 hrs	0 mins
				(60 mins = 1 hr)	

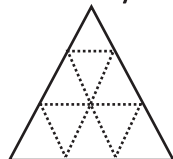
Try Solving Some Puzzles -

- Make this shape with match sticks. How many squares are there in it?

Now pick up any two sticks and place them in such a way that four squares are formed.



- How many triangles are there in this shape?



- Raman has 25 apples. He gave some apples to Shyam and Mahesh. Now Raman is left with only 10 apples. How many apples did Shyam and Mahesh get ?

If Shyam got twice the apples Mahesh got , then how many apples did Mahesh get?

Let's Solve

Crossword Puzzle - Magic Square is a square (box) in which some numbers are written in such a way that the sum of the numbers arranged in each row, column and diagonals is the same.

2	7	6	15
9	5	1	15
4	3	8	15
15	15	15	

Sum of numbers arranged in each row, column and diagonals = 15

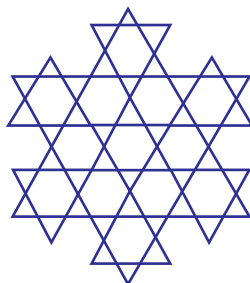
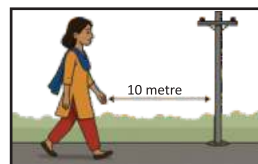
Numbers from 1 to 9 are written in a 3×3 square in such a way that the sum of each row and each diagonal is the same

Make Your Own Magic Square

8		
	5	

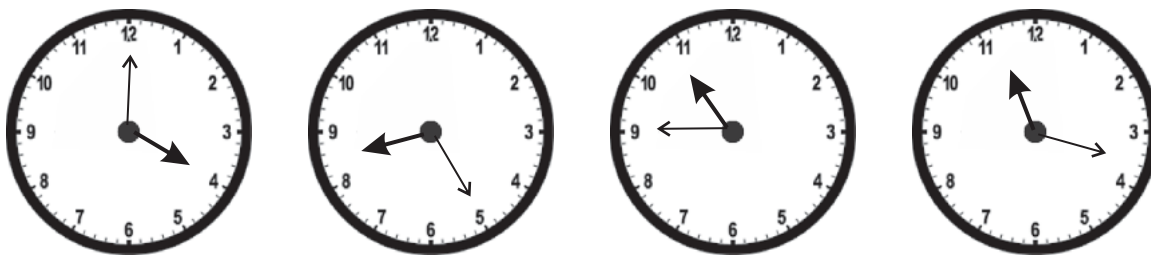
	9	
	5	

- A girl takes two steps forward and then one step backward . How many steps does she have to take to reach to a tap which is 7 steps away from her?
- Anita's friend's house is 100 m away from her house. On the way, there are poles placed after every 10 metre. How many poles does Anita have to cross to go from her house to her friend's house?
- The figure is made up of triangles only. The triangles are of different sizes . How many triangles are there in it?



Practice Work

1. Find the time by looking at the clock.



2. Fill in the blanks-

(i) 2 hrs 5 minutes =minutes

(ii) 3 hrs 5 minutes =minutes

(iii) 1 hr 16 minutes = minutes

(iv) 4 hrs 42 minutes minutes

3. Find the total time-

(i) 6 hrs 40 minutes and 3 hrs 25 minutes

(ii) 2hrs 40 minutes and 3 hrs 17 minutes

(iii) 4 hrs 14 minutes and 7 hrs 37 minutes

(iv) 8hrs 32 minutes and 1hr 28 minutes

4. Draw pictures of clocks and indicate the following time in them -

(i) 6 hrs 30 minutes

(ii) 8 hrs 11 minutes

(iii) 2 hrs 57 minutes

(iv) 1 hr 40 minutes

5. Draw pictures of 24 hour clocks and indicate the following time in them -

(i) 07:00 a.m.

(ii) 11:30 p.m.

(iii) 12 midnight

(iv) 12 noon

6. Geeta takes 3 hrs 35 minutes to reach her grandmother's house. If she leaves her house at 8.45 a.m., at what time will she reach there ?

7. A bus departs from Udaipur at 21:30 hrs and reaches Ahmedabad at 05:30 hrs then find the travel time.

8. Using the given figure find the weight of each lock if the weight of 3 keys is 1 kg.



9. A four digit number is formed using the numbers 8, 4, 7 and 3. If this digit is greater than 6000 and less than 7800 then which number can come in the hundreds place of the digit?

10. If 15th January is Tuesday then which day will be on 25th January?



Let's Discuss

Priyanshu and his sister Khushi were very curious and were interested in learning new things. One day they both went to the market with their grandmother. There they saw that people were using notes and coins for various types of transactions.



Grandma, how are these notes and coins used?



Son, we call these notes and coins currency and through these we transact goods and services. The official currency in India is Rupee.

Meanwhile, Grandma, Priyanshu and Khushi reached a grocery store. Grandma asked the shopkeeper for 2 kg rice and 1 kg pulse. The shopkeeper weighed the rice and pulse and told their total price as Rs 240.

Grandma took out a 500 rupee note from her wallet and gave it to the shopkeeper.

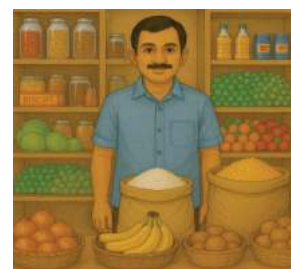
Khushi: Grandma, you gave Rs 500 but the rice and pulses cost Rs 240, so how will we get the rest of the money?

Grandma: The shopkeeper will take out 240 rupees from 500 rupees and return the rest of the money. The shopkeeper gave a 200 rupee note, a 50 rupee note and a 10 rupee coin.

Priyanshu: Now I understand how currency is exchanged.

Khushi: Grandma, is there any symbol of Indian rupee?

Grandma: Yes, look at this symbol of Indian currency (₹).



Currently Prevalent Indian Currency

Look at the rupee and write its value -

				
₹ 1	₹	₹	₹	₹

		
₹	₹	₹

		
₹	₹	₹



Digital Currency - Digital currency is an electronic currency used in online transactions. The digital currency issued by the Reserve Bank of India is **₹** or 'digital rupee'.

Change for Rupees & Paise -

If we have to make 20 rupees in change then -



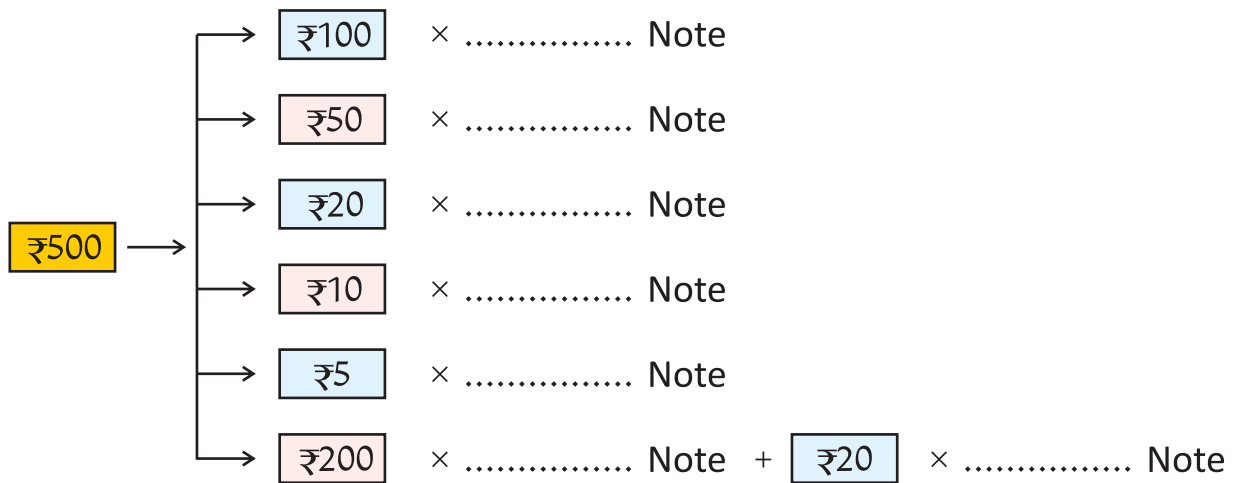
Let's Try

Make change for 20 rupees in 5 other ways with the help of coins –

.....

.....

If we have to change ₹500 with the help of notes then -



Use of Currency in Daily Life

Example 1: The price of one litre petrol is ₹105 and 42 paise. Then find the price of 5 litre petrol.

Solution: The price of one litre petrol is ₹105 and 42 paise.

1 rupee = 100 paise

Hence the price of 5 litre petrol is 5 (₹105 and 42 paise)

Rupee (₹)	Rupee (₹)
105	42
× 5	× 5
₹505	₹210 paise
	200 paise + 10 paise
	₹2 + 10 paise
₹505 + ₹2 ←	
₹507	10 paise

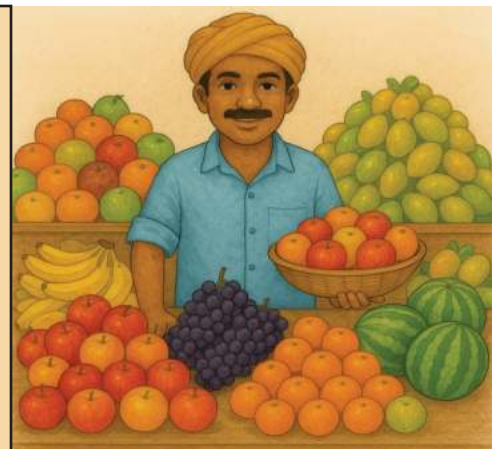
Thus, 5 litres of petrol costs 507 rupees & 10 paise.

Example-2

Yogesh buys 1 kg pomegranate, $\frac{1}{2}$ kg apple, $\frac{1}{2}$ kg grapes, 2 kg bananas and 2 kg oranges from a fruit seller. He gives a note of ₹500 to the fruit seller.

How much money will the fruit seller give him back?

Price List	
Apple	= ₹120/kg
Pomegranate	= ₹150/kg
Grapes	= ₹90/kg
Bananas	= ₹40/kg
Oranges	= ₹60/kg
Watermelon	= ₹20/kg



Solution:	Name of fruit	Quantity (kg)	Rate (₹/kg)	Price (₹) (G)
	Pomegranate	1	150	150
	Apple	$\frac{1}{2}$	120	60
	Grapes	$\frac{1}{2}$	90	45
	Banana	2	40	80
	Orange	2	60	120
				Total Rs. = 455

Yogesh gives ₹500 to the fruit seller.

So, the money returned by the fruit seller to Yogesh is $500 - 455 = ₹45$

Can you find out which notes and coins the fruit seller might have used to return the money to Yogesh?

Conversion of Currency

We know that 1 rupee = 100 paise i.e. if you have 5 rupees then it means you have 500 paise.

Conversion of Rupees into Paise -

- (i) ₹8 = paise
- (ii) ₹15 = paise
- (iii) ₹84 = paise
- (iv) ₹4 or 65 paise = paise

Conversion of Paise into Rupees -

- (i) 600 paise = ₹
- (ii) 270 paise = ₹ + paise
- (iii) 3200 paise = ₹
- (iv) 500 पैसे = ₹

Various Mathematical Puzzles Related to Currency

Example-1

Solve the given magic square puzzle and answer -

- (i) How much money will Krishna get?
- (ii) Arrange the money received by Gopal, Hari and Krishna in descending order.

5	Gopal	3
4	6	Krishna
9	Hari	7

Solution-

The sum of the numbers in the first column is $5 + 4 + 9 = 18$

Similarly, the sum of the numbers arranged diagonally is $- 5 + 6 + 7 = 18$

In this magic square, the sum of the numbers arranged in each row, column and diagonal is 18.

Therefore, Money received by Gopal in the first row is $= 18 - (5 + 3) = ₹10$

(I) Money received by Krishna in the second row is $= 18 - (4 + 6) = ₹8$

Money received by Hari in the third row is $= 18 - (9 + 7) = ₹2$

(ii) Money received by Gopal, Hari and Krishna in descending order is

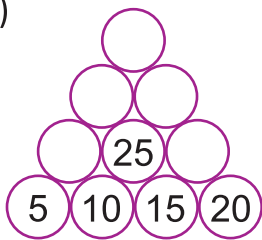
$= \text{Gopal} > \text{Krishna} > \text{Hari}$

$₹10 > ₹8 > 2$

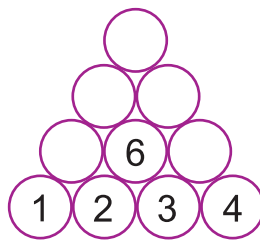


Let's Solve

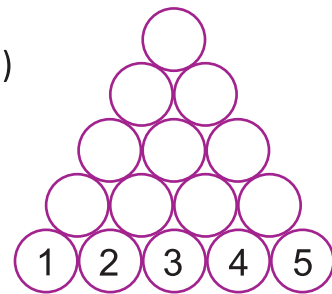
(i)



(ii)



(iii)



40 children participated in a programme. Look at the pie chart given below and answer -

1. How many children are participating in dance?

(a) Half

(b) One fourth

(c) Three fourth

2. The number of children participating in singing is _____.

3. The number of children participating in drama is _____.

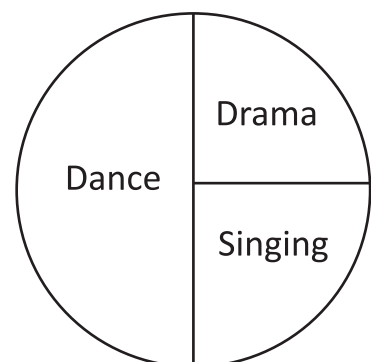
4. Most of the children are participating in _____.

5. How many children are participating in drama?

(a) Half

(b) One fourth

(c) Three fourth



Practice Work

1. Devraj's and Shubham's father gave 300 rupees 85 paise to Devraj and 450 rupees 50 paise to Shubham. How much money did the father give to both of them in total?
2. Aditya had 2200 rupees 75 paise in his bank account. Out of that, 856 rupees 90 paise were deducted as installment, so how much money is left in his account now?
3. If the cost of a dozen footballs is 5760 rupees, then what will be the cost of one football?
4. Fill in the blanks of the given magic square puzzle –

₹ 7		₹ 5
	₹ 8	
₹ 11		₹ 9

5. Solve -

(i)

Rupee	Paise
24	70
+ 13	45

(i)

Rupee	Paise
132	55
+ 343	00

(iii)

Rupee	Paise
67	90
– 34	30

(iv)

Rupee	Paise
330	10
– 87	65

(v) 23 rupees 45 paise $\times$ 7

(vi) 120 rupees 17 paise $\times$ 5

6. Khushi went to the market to buy household items. She bought items from the shop and also calculated her bill by looking at the price list. Her grandmother gave her 4 notes of ₹ 500. Find out whether Khushi's items will cost ₹ 2000 or not?

PRICE LIST

Item	Price/per kg
Rice	₹ 3 0
Arhar Dal	₹100
Urad Dal	₹120
Sugar	₹ 4 0
Salt	₹ 2 0
Turmeric	₹ 120
Flour	₹ 3 0
Tea leaves	₹ 160
Ghee	₹ 400

Khushi bought	Item cost
1 kg ghee	= ₹
3 kg rice	= ₹
500 g arhar dal	= ₹
4 kg sugar	= ₹
2 kg salt	= ₹
1 kg urad dal	= ₹
250 g turmeric	= ₹
5 kg flour	= ₹
250 g tea leaves	= ₹

Total price = ₹.....

How much did Khushi buy and how much money did she have left?

Find out if Khushi is right? Write true or false and answer -

- (i) The combined price of ghee and flour is more than ₹ 500.
- (ii) 1 kg ghee is ₹ 60 more expensive than 1 kg tea leaves.
- (iii) The price of 3 kg sugar and 1 kg turmeric is the same.
- (iv) The price of arhar dal is less than the price of urad dal.
- (v) The price of sugar is less than turmeric.

**Let's Discuss**

Anmol's father thought of making a beautiful garden in the empty space in front of his new house. To make the garden beautiful, he made flower beds of different shapes (rectangular, circular, square).

Anmol was playing and walking along the edges of all types of beds and looking at the beautiful flower plants planted there. Then her father's eyes fell on Anmol. Father thought of explaining the concept of perimeter of plane geometric figures to Anmol in a playful way. He explained to Anmol that the distance covered by taking a



round around the edge of any closed symmetrical figure is called the perimeter of that figure.

To find the perimeter, we add all the sides of any closed symmetrical figure.

Anmol asked her father – This circular bed has no sides, so how will you find its perimeter?

Father - To find its perimeter, we will take a rope and measure it around the boundary of the flower bed then straighten the rope and measure it with the help of an inch tape. The measurement of the rope will be its perimeter. The perimeter of circular shapes is also called circumference.



Radius is required to find the circumference.

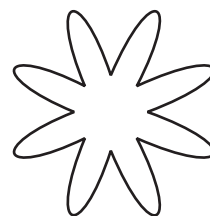
You will learn to find the circumference of a circle in higher classes.

Two of Anmol's friends came to her house because they had to apply lace on handkerchiefs.

(i)



(ii)



These are very strange handkerchiefs. Now what length of lace should we apply on them?

Father, how do we find out the length of lace to be applied on these two handkerchiefs?

For this, we will take a thread and measure the length of the border of the handkerchief. After that, measure the thread with a scale. Here you go.

The length that we will measure is called Perimeter.

Now you measure the handkerchiefs with the thread and scale and tell how much lace will be required for them?

1. Length of lace to be applied on the first handkerchief = cm
2. Length of lace to be applied on the second handkerchief = cm
3. How much total lace will be required for both the handkerchiefs? = cm

Calculation of Perimeter of Simple Two Dimensional Shapes

Example-1

Find the perimeter of the given shape -

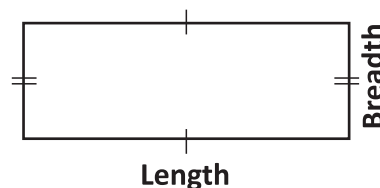
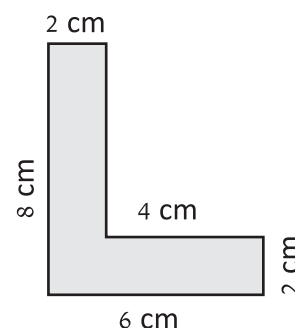
Solution- Perimeter of the given shape = Sum of the measures of all sides = 2 cm + 6 cm + 4 cm + 2 cm + 6 cm + 8 cm

Perimeter of Special Shapes-

1. **Perimeter of Rectangle** - The opposite sides of a rectangle are of equal measure.

Perimeter of Rectangle = Length + Breadth + Length + Breadth = $2 \times (\text{Length} + \text{Breadth})$

Perimeter of Rectangle = $2 (\text{Length} + \text{Breadth})$

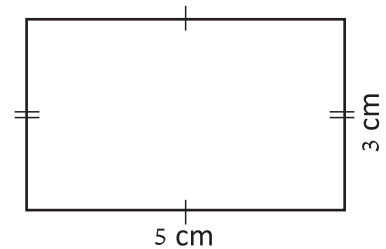


Example-2

Find the perimeter of the given figure.

Solution - The given figure is a rectangle.

First Method : Hence, the perimeter of the rectangle
 $= 5 \text{ cm} + 3 \text{ cm} + 5 \text{ cm} + 3 \text{ cm}$
 $= 16 \text{ cm}$



Second Method:

Length of rectangle $= 5 \text{ cm}$

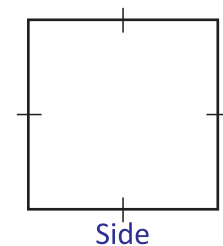
Breadth of rectangle $= 3 \text{ cm}$

Perimeter of rectangle $= 2 \times (\text{length} + \text{breadth})$
 $= 2 \times (5 \text{ cm} + 3 \text{ cm})$
 $= 16 \text{ cm}$

2. Perimeter of Square-

All the four sides of a square are of equal measure.

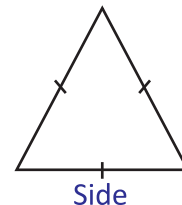
So, Perimeter of Square $= \text{side} + \text{side} + \text{side} + \text{side}$
 $= 4 \times \text{measure of one side}$



3. Perimeter of Equilateral Triangle-

All the three sides of an equilateral triangle are of equal measure.

Therefore, the perimeter of the equilateral triangle is
 $= \text{side} + \text{side} + \text{side}$



Anmol's father asked her - Can you now find the perimeter of the geometric shapes around you?

Anmol - Yes, I can find the perimeter of the door and window frames of our house, the fencing around our field, the boundary wall of my school etc.

Discuss with your friends about identifying the perimeter of the geometric shapes available in your surroundings and finding their value.

The next day, Anmol's father brought grass to plant in the beds.

Anmol asked curiously – Father, where will we plant this grass?

Father - We will plant it in the empty space left in the beds.

Anmol- Father, you called the length of the row of plants planted on the sides of the flowerbed as its perimeter, but what will we call the area covered by the grass after it is planted?

Father- The amount of space that an object occupies on a plane is called the area of the object/figure.

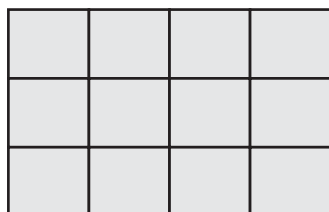


After a few days, Anmol's father brought 1 unit $\times$ 1 unit = 1 square unit tiles for the floor. When Anmol saw the mason laying tiles on the floor, she started counting them. In the evening, after the work was completed, Anmol told her father that a total of 120 tiles have been laid in this courtyard. Father said, yes, 120 tiles have been laid in the courtyard. Hence the area is 120 square units.

By using a given object/figure as a measuring unit, we can find the approximate area of a simple geometrical figure (rectangle, square).

Example-

With the help of how many books can the area of the upper surface of the given table be completely covered?



Solution- Books are placed in three rows and four columns on the upper surface of the table.

$$\text{Area of the table} = \text{Length} \times \text{Breadth}$$

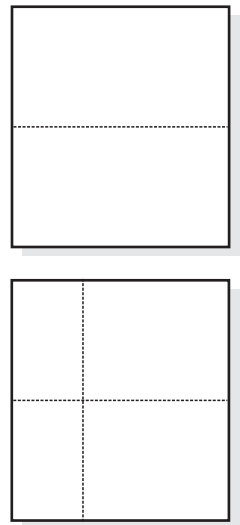
$$4 \text{ books} \times 3 \text{ books} = 12 \text{ books}$$

Hence the area of the upper surface of the table can be completely covered with the help of 12 books.

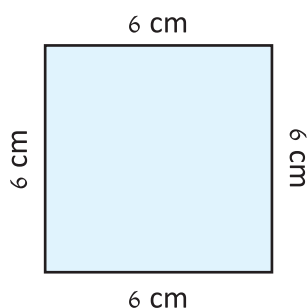
Length and Area are Always Conserved-

A child brought a thread in the class which was 35 cm long. While playing, the thread broke. When the child measured both the pieces separately and added them, it was also 35 cm. When he asked the teacher about this, he told that length is always conserved. The length of a straight line does not change by bending or rotating it. The teacher also told that area is also always conserved. He explained this by an example.

The teacher took a paper and folded it from the middle along the width. Again, he folded it from the middle along the length. In this way, he got four parts of the paper. The area of the paper will be equal to the area of those four parts.



Example- Diya made a square of 6 cm side with a thread. By rearranging the same thread, she made a rectangle of 8 cm length. What is the width of the rectangle ?

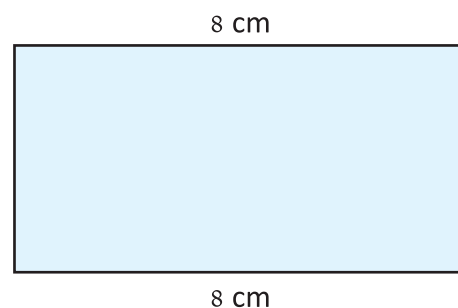


Perimeter of square

$$\begin{aligned} &= 4 \times \text{Length of one side} \\ &= 4 \times 6 \text{ cm} \\ &= 24 \text{ cm} \end{aligned}$$

So, the total length of the thread is 24 cm.

The perimeter of the rectangle made from the same thread will also be 24 cm.



According to the shape of a Rectangle –

The sum of the lengths of the rectangle
 $= 8 \text{ cm} + 8 \text{ cm} = 16 \text{ cm}$

The sum of the widths of the rectangle
 $= 24 \text{ cm} - 16 \text{ cm} = 8 \text{ cm}$

Then one width of the rectangle
 $= \frac{8 \text{ cm}}{2} = 4 \text{ cm}$

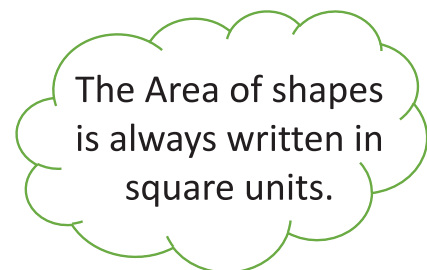
Example- If the length of a playground is 20 m and the width is 15 m, then find the area of this playground.

Solution-

Length of the playground is 20 m .

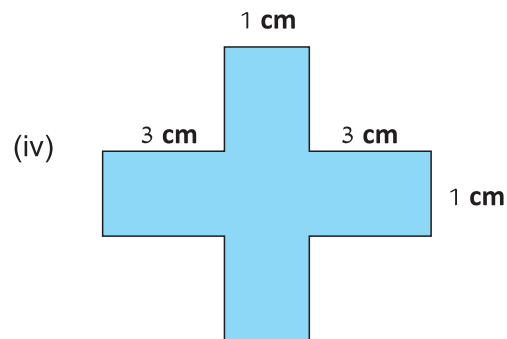
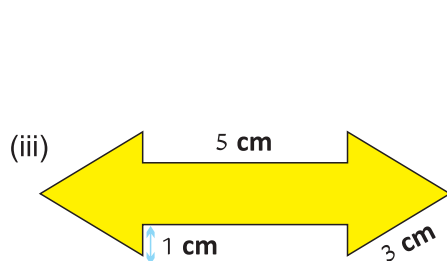
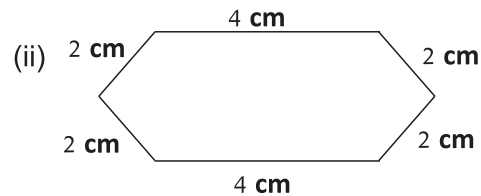
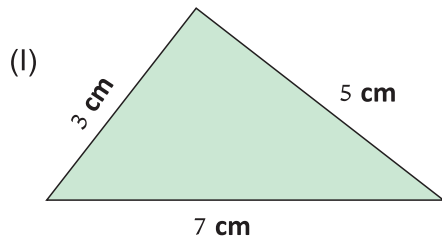
Width of the playground is 15 m.

$$\begin{aligned} \text{So the area of the playground} &= \text{Length} \times \text{Width} \\ &= 20 \text{ m} \times 15 \text{ m} \\ &= 300 \text{ square meter} \end{aligned}$$



Practice Work

1. Find the perimeter of the given figures-



- The side of a square is 7 cm. What will be its area?
- The length of a blackboard is 6 feet and the width is 4 feet. Find the perimeter and area of this blackboard.
- The perimeter of a rectangular warehouse is 56 meters. If the length of the warehouse is 18 meters, find the width of the warehouse.
- A farmer has two rectangular fields. The length of the first field is 20 meters and the width is 15 meters. The length of the second field is 25 meters and the width is 10 meters. Which field has more perimeter and by how much?
- If the perimeter of a square field is 92 meters, then find the side of the field.
- If the length of a rectangular room is 8 meters and the width is 3 meters, then find the perimeter of the room.
- The length of a rectangular garden is 25 meters and the width is 15 meters. Find the area of the garden.
- The length of a rectangular field is 30 meters and the width is 25 meters. Find the area and perimeter of this field.
- Rahul had to walk 60 meters to take three rounds of a square field, then find the side of the square field.



Let's Discuss

Impressions & Shapes -

The children in the class have made different shapes by making impressions. You too make different shapes by making impressions of different objects. See what you can make?



Raman: Hey! Look how does the duster look after tracing?

Vijay: My bottle has made a circle.

Sampat: Which shape has occupied the most space among these? Can we measure?

Raman: Hey look! My exercise book is covered by 36 leaves. A little space is still empty.

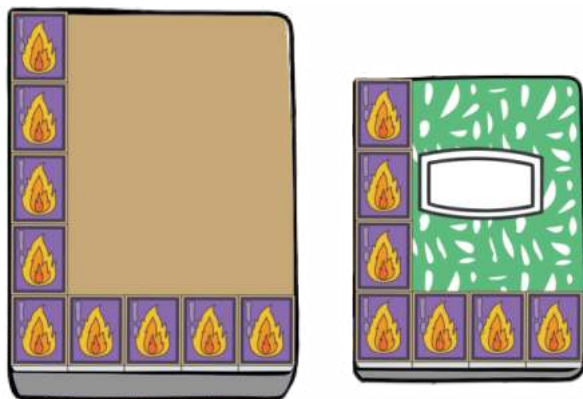


You too measure and answer

- How many erasers covered your duster?.....
- How do we find out which shape is how much bigger?
- Book or exercise book?.....

Let's Solve

1. matchboxes are required to cover the book completely.
2. matchboxes are required to cover the exercise book completely.
3. How many less matchboxes are required to cover the notebook than the book?



Look and answer Which Leaf is Bigger



The area of such irregular shapes cannot be estimated by just looking at them. So we try to find the area using grid paper.

Let's Try

Method of finding the approximate area by counting the boxes on grid paper-

1. First of all, count the boxes that are fully formed inside the shape.
2. Count the half-formed boxes and $\frac{1}{2}$ halve their number.
3. Those boxes that are less than half are left out.
4. Those boxes that occupy more than half the space are considered as one full box and counted.

Thus, the area of the given figure (approximate) -

$$= \text{Number of complete boxes} + \text{Half of the number of half-formed boxes} + \text{Number of boxes occupying more than half the space.}$$

Example- Find the approximate area of the given figure -

Solution-

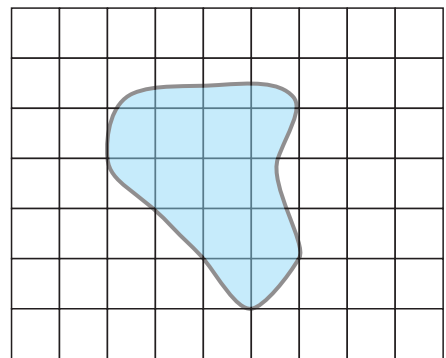
Number of complete boxes = 05

Number of half- formed boxes = 04

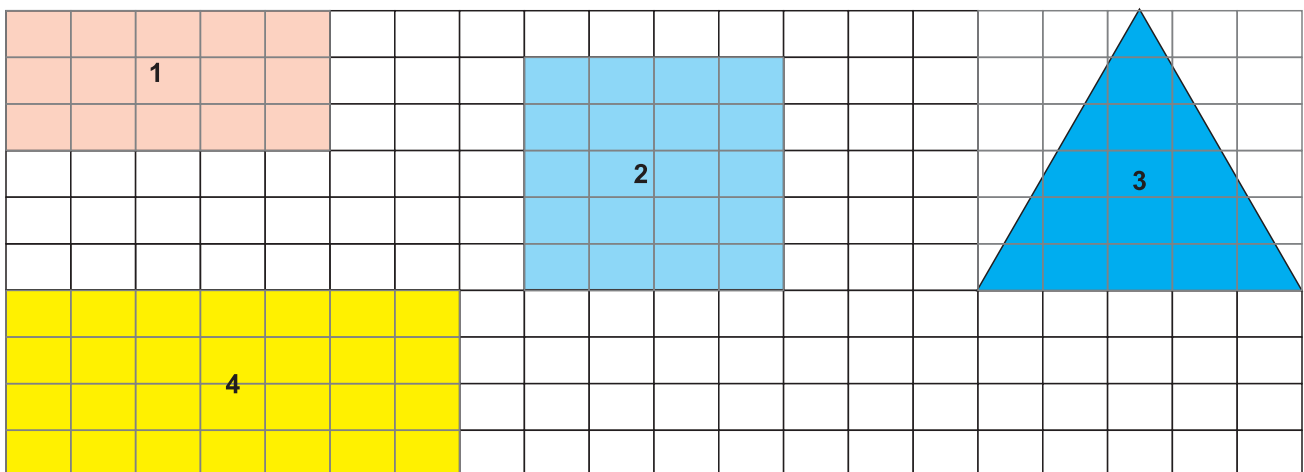
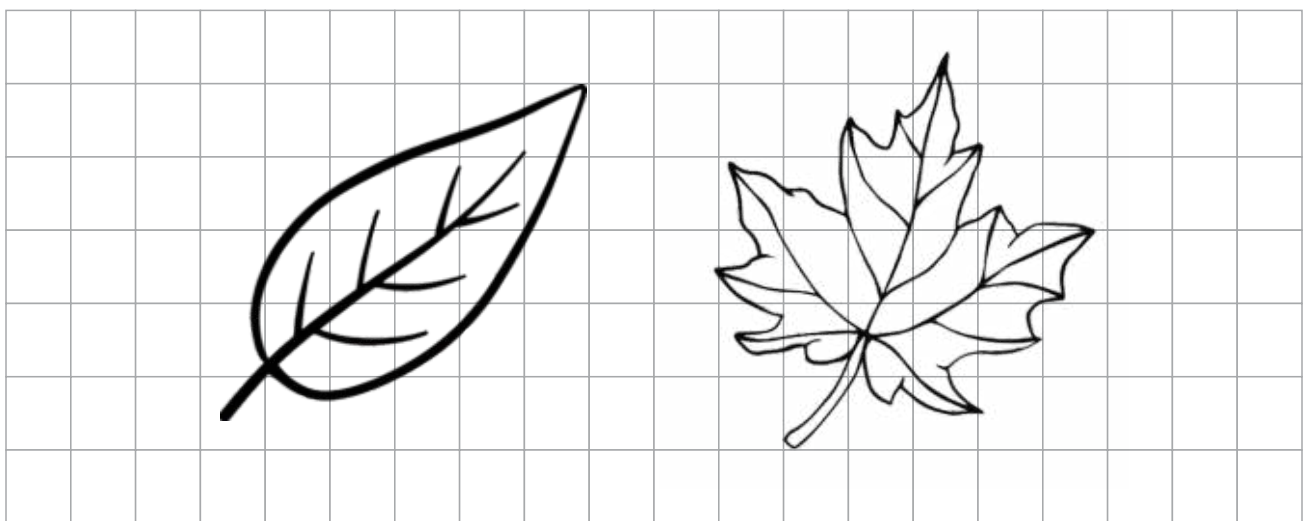
Number of boxes occupying less than half space = 05

Number of boxes occupying more than half space = 03

Area of the given irregular figure = $05 + \frac{1}{2} \times 4 + 05 \times 0 + 03$
 $= 5 + 2 + 0 + 3 = 10$ square units



The teacher said, “Let's put some objects on a grid paper and trace them with a pencil.”



Let's Solve

Fill the table by counting the boxes -

Serial No.	Figure	Occupied Blocks
1		
2		
3		
4		

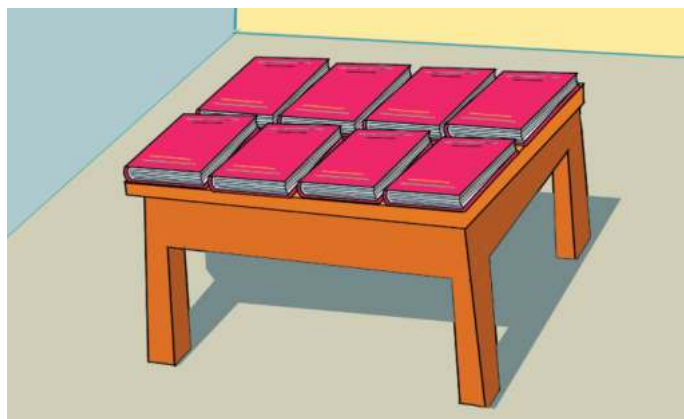
The teacher told that each block is a square. Each block is 1 cm long and 1 cm wide, so the area of each block is equal to 1 square cm.

Fill in the blanks-

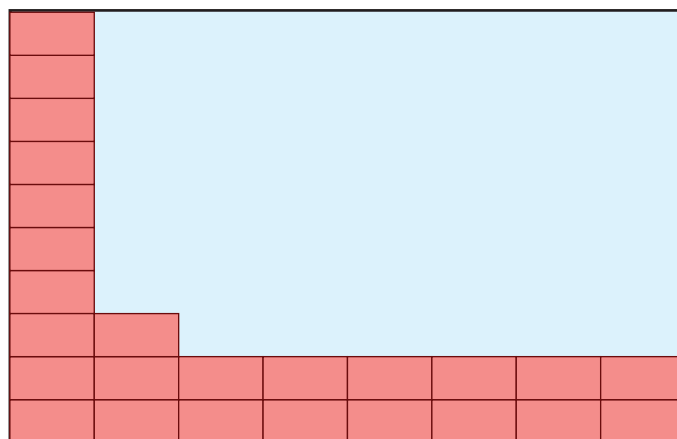
- Figure 2 occupied square cm of space.
- Figure 3 occupied square cm of space.
- Figure 4 occupied square cm of space.

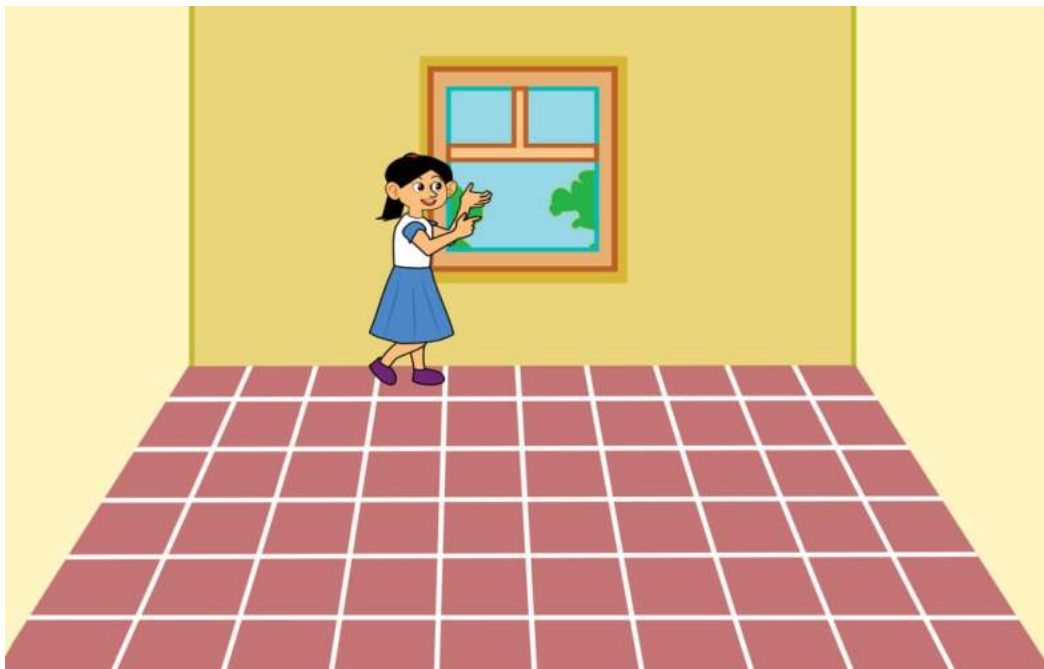
First Guess, Then Check-

- How many books of children of your class will cover the table?



- How many bricks will be used to make a complete wall?





3. How many tiles are laid on the floor of the room?

Ant's Race -

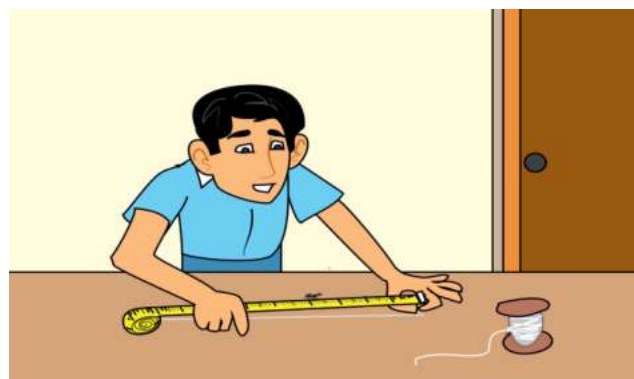
Raman: Hey! The ant could not find a way to get out of the leaf. I will take it off the leaf with the help of a straw.

Jyoti: The poor ant got tired of running but how much did the ant run in one go? Let's measure.

How will you measure ?

Other: Let's measure with the help of thread and inch tape.

The ant ran 30 centimetres in one go.



Let's Solve

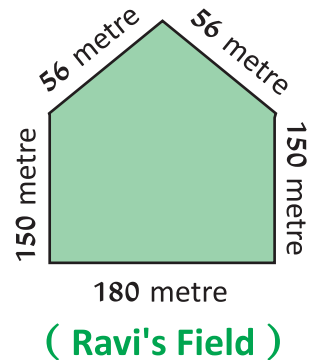
1. How many centimetres did the ant run in 3 times ?
2. How many centimetres did the ant run in 4 times ?
3. How many rounds did the ant take in a race of 150 centimetres ?
4. How many rounds did the ant take in a 3 meter race ?



Let's Discuss

Ravi has sown gram in his field. He has to guard his field every night from animals like Nilgai. He has built a hut from where he can see his field from all sides. He walks around his field three times at night. He makes sure that no animal enters his field.

1. What is the total length of the fence around Ravi's field?
2. Ravi walks than 1 kilometre every day to protect his crop. More / Less
3. How many meters will Ravi walk in two days to protect his crop?



Let's Solve

1. Describe the total length of the fence of the figures given below -

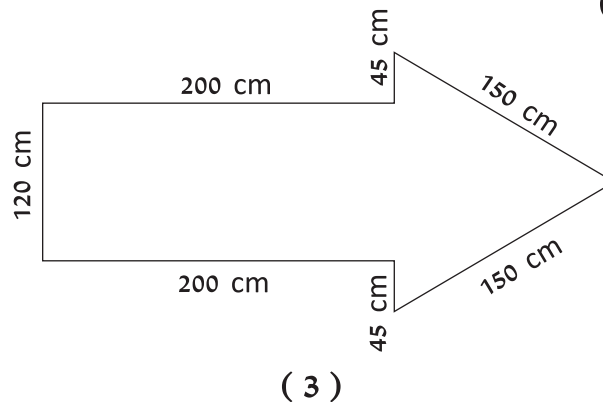
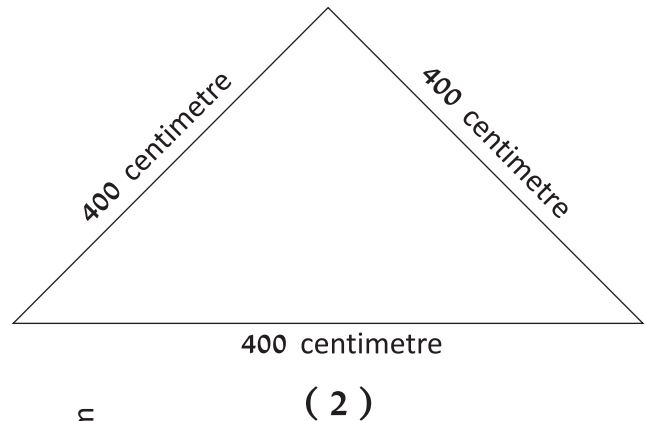
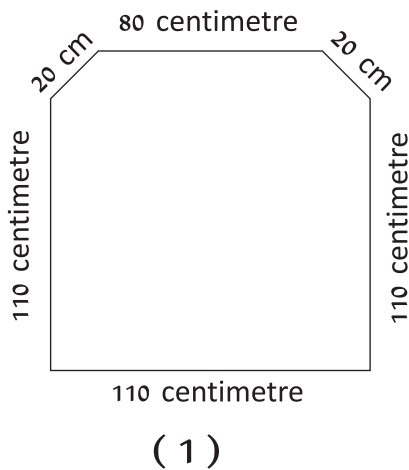


Figure (1) - Total length of the fence = meter

Figure (2) - Total length of the fence = meter

Figure (3) - Total length of the fence = meter

2. Estimate the total area of the figures given on the grid -

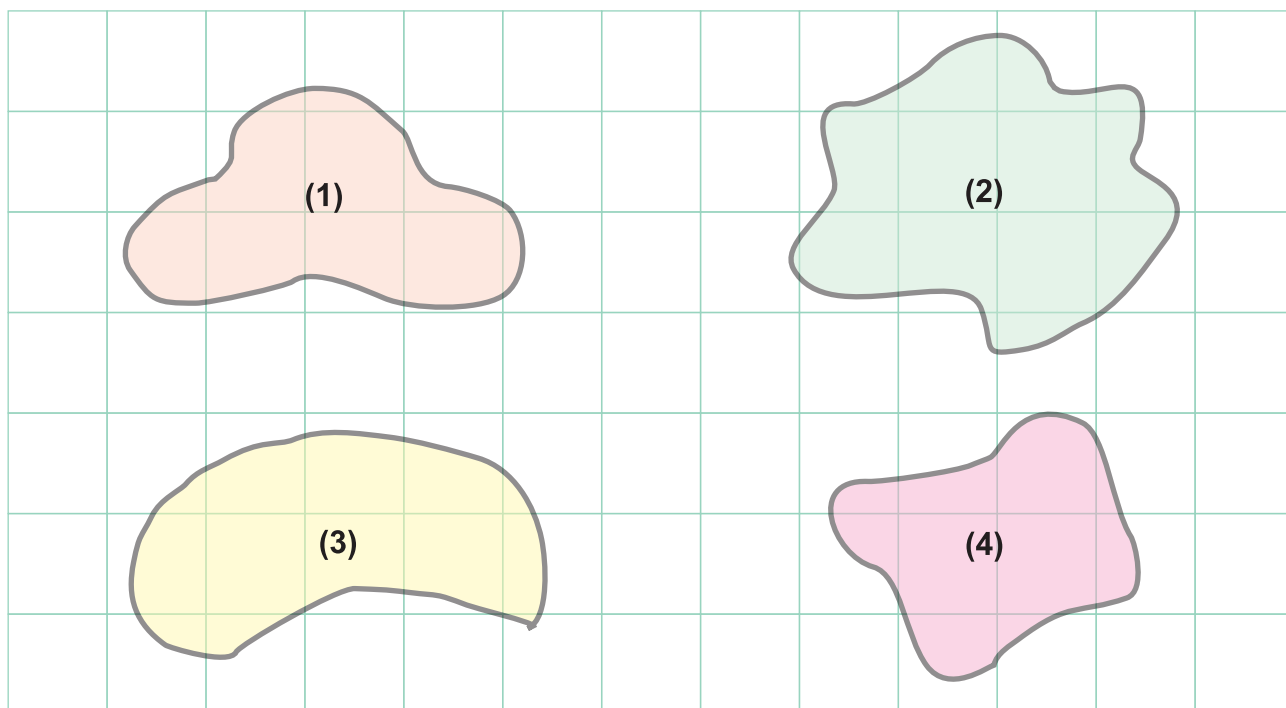


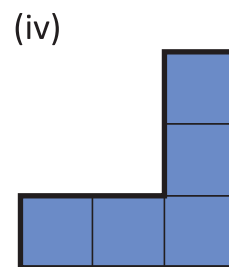
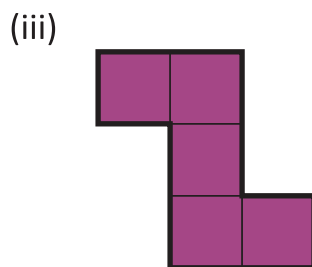
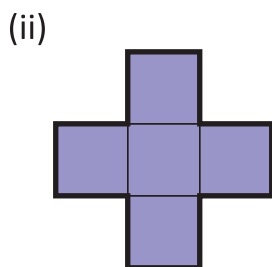
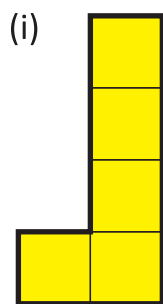
Figure (1) - Total area of circle =

Figure (2) - Total area of circle =

Figure (3) - Total area of circle =

Figure (4) - Total area of circle =

3. Raman is making different figures from 5 square shaped tiles -
(tiles are 1 × 1 meter)



Which figure has the highest perimeter?

Which figure has the lowest perimeter?

4. Make different shapes with these square tiles with your friends -
 - How many different shapes have you made?
 - The highest perimeter is = cm.
 - The lowest perimeter is = cm.
 - Area of all shapes is (equal / unequal)
5. Aarti's mother wants to get lace stitched around her dupatta. The length of the dupatta is 2 meters and the width is 1 meter.
 - How much lace will Aarti buy from the shopkeeper for the dupatta?
 - The shopkeeper said that the lace is 80 rupees per meter. Aarti buys half a meter extra. Tell how much money will she pay to the shopkeeper?
6. Anurag is preparing to join the army. Every morning he goes for a run in the garden near his house, which is 500 meters long and 300 meters wide.
 - Anurag takes 5 rounds of the garden while running. He runs kilometre every day.
 - Anurag runs kilometre in 1 round.
 - Anurag took 2 rounds. Halfway through the third round, his father called him. Today he ran meter.
 - How many metre less did Anurag run today than he did every day?

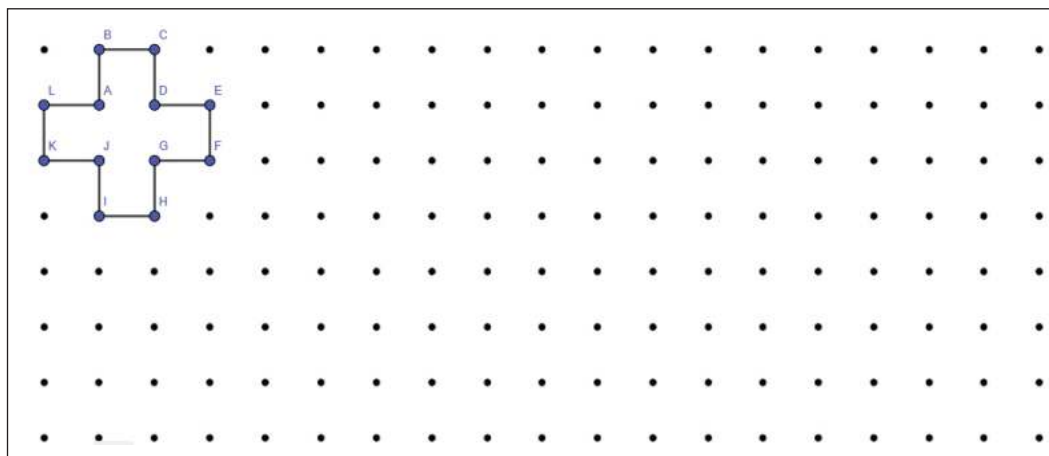


Let's Try

Look, Raman has drawn a figure on the dot paper given below.

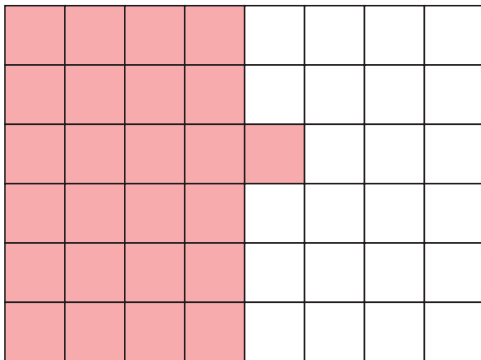
You too draw two other figures whose perimeter is the same.

Make such figures whose area is equal to the given figure.

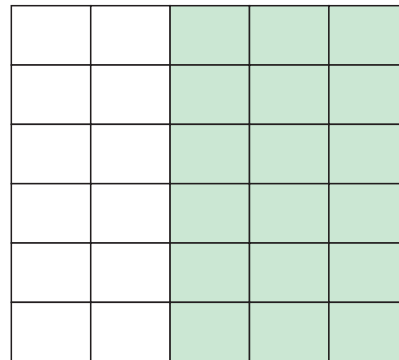


Practice Work

- An irregularly shaped leaf is placed on a square grid. If the number of boxes completely occupied by the leaf is 16, the number of boxes occupied more than half is 4 and the number of boxes occupied less than half is also 4, then the approximate area of the leaf is-
 (a) 16 square units (b) 18 square units (c) 20 square units (d) 28 square units
- A rectangle is made up of square boxes. It has 5 boxes in a row and 2 boxes in a column. The area of the rectangle is-
 (a) 7 square units (b) 10 square units (c) 12 square units (d) 14 square units
- Riya coloured some boxes of a square shaped paper to make a picture. If the coloured part is in the shape of a square and its area is 4 square units, then the side of this square is-
 (a) 4 square units (b) 16 square units (c) 4 units (d) 2 units
- Find the area of the shaded part of the figures given below by counting the square boxes -

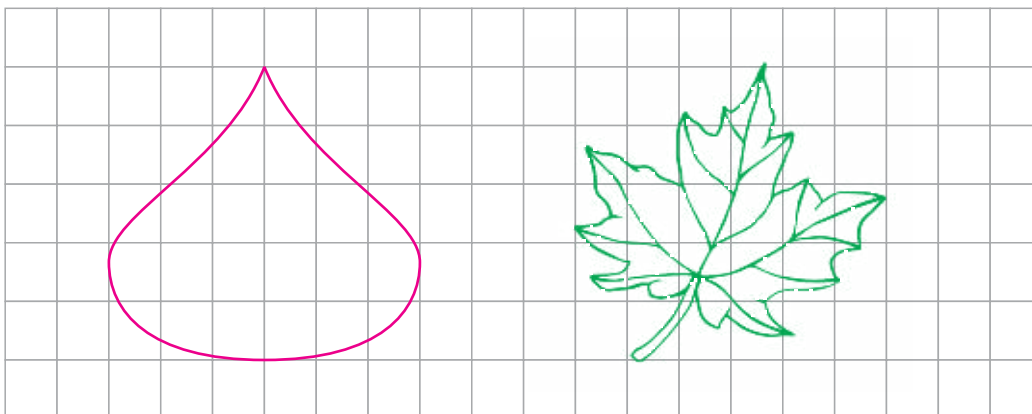


Area = square unit



Area = square unit

- Estimate the area of the figures shown in the square grid -



Area = square unit

Area = square unit



Let's Discuss

One day Reena and Sangeeta made a list of some sweets. They gave this list to each child in the class and asked them to put a tick mark (✓) in front of the sweet of their choice.

One by one all the children put a tick mark (✓) in front of the name of the sweet of their choice.



Look at the table and tell -

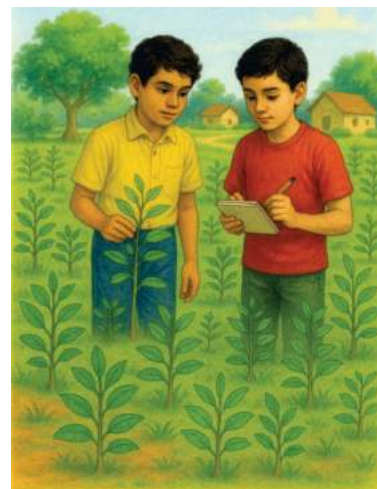
1. Which sweet do children like the most?
2. Which sweet do children like the least?
3. How many children like Gulab Jamun?
4. How many children like Ras-Malai?
5. Which sweet do children like more , Laddu and Kaju Katli?

Sweets	My Favourite Sweets
Laddoo	✓ ✓ ✓ ✓ ✓
Kaju Katli	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Jalebi	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Gulab Jamun	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Rasmalai	✓ ✓ ✓ ✓ ✓ ✓

Sangeeta said that counting with the tick mark (✓) like this is a bit difficult and takes more time. Next time while making a table, we will have to find some other way.

Green Rajasthan Campaign

The next day, Suresh and Gaurav along with their friends went to find out the saplings planted in their village under the Green Rajasthan Campaign. They roamed around and started writing the names of the trees in a table like this. When they found a Neem tree, they put a tally mark (I) in front of Neem in the table. When they saw another Neem tree, they put another tally mark (II). When the tally marks started increasing gradually, Gaurav said that if we put tally marks like this, it will be difficult to count. If we add the fifth tally mark with four tally marks and if we make bundles of



five tally marks each , it will be easy for us to count. In this way, they kept putting tally marks for all the plants. Their table was made like this.

Let's Solve

Look at the table and answer -

1. How many Neem trees are there?.....
2. How many Tamarind trees are there?
3. How many more Banyan trees are there than Neem tree ?
4. How many trees are there in total?
5. What is the total number of Khejri, Tamarind and Shisham trees?

Tree	Telly mark	No. of trees
Neem	||||	4
Khejri	|||||	10
Banyan	|||||	13
Tamarind	|||||	8
Shisham	|||	3

Pictograph

Pictograph is a medium of showing data or information in which picture symbols are used. In pictograph, picture symbols are used to show counting. If the count is more, we use picture symbols according to the given scale.

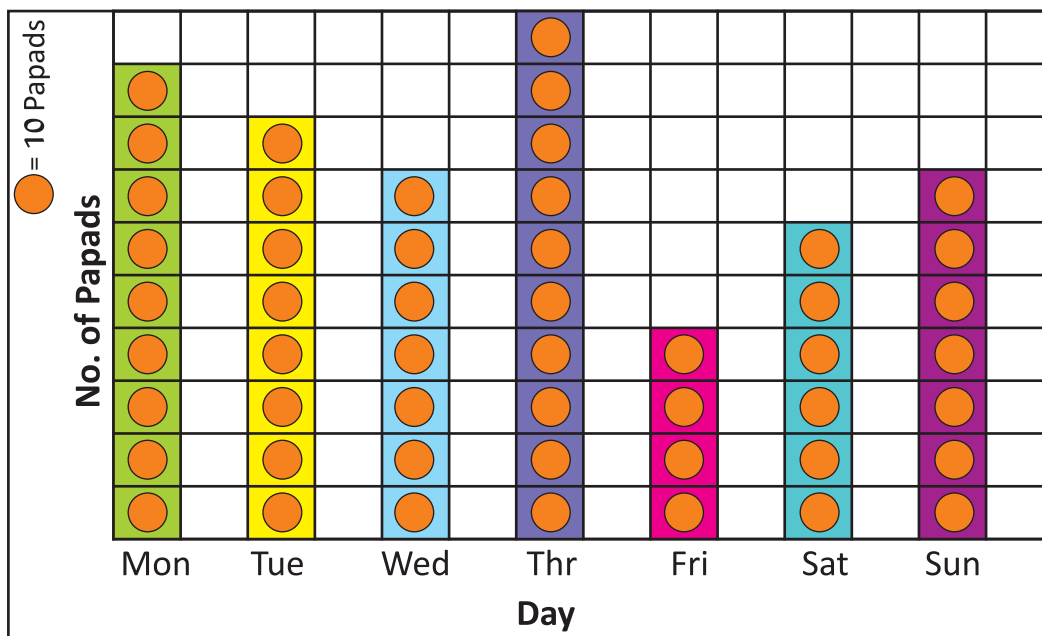
- The number of papads made by the Women Self-Help Group in a week is shown by pictograph. For a packet of 10 papads, the symbol (●) is shown.

Day	● = 10 Papads
Monday	● ● ● ● ● ● ● ● ● ●
Tuesday	● ● ● ● ● ● ● ●
Wednesday	● ● ● ● ● ● ●
Thursday	● ● ● ● ● ● ● ● ● ●
Friday	● ● ● ●
Saturday	● ● ● ● ● ●
Sunday	● ● ● ● ● ● ●

Look at the table and answer -

- On which day were the most papads made and how many?
- Which day between Wednesday and Friday were more papad made and how many?

We made the pictograph in horizontal form. Now let us make it in vertical form.



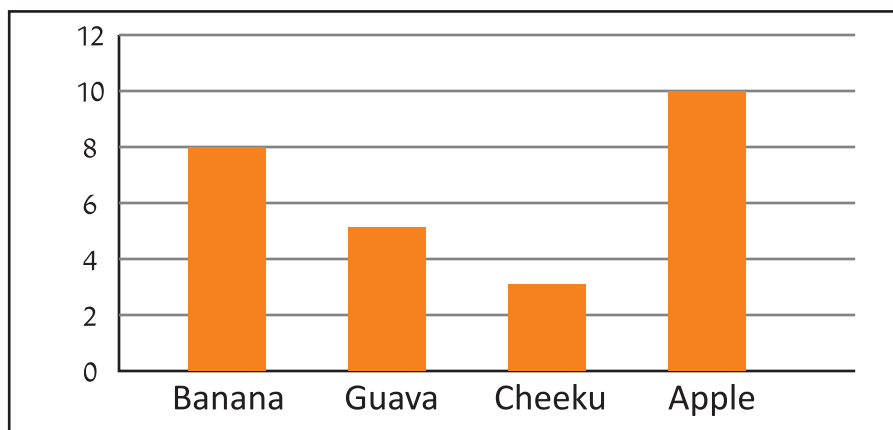
Has there been any change in showing the data in this way?

Bar Graph (Column Chart)

The teacher asked the students of class 4 about their favourite fruit and tabulated it as follows -

Fruit	How many liked
Banana	8
Guava	5
Cheeku	3
Apple	10

This information can also be displayed on grid paper through columns (bar graph).



Let's Solve

Pictograph

The pictograph of the colour preferred by people in a housing society is given below. Complete the table of pictograph and write answers to the questions given below-

 = 10 People

Colour	Pictograph	Number
White		35
Black		
Red		
Green		
Blue		

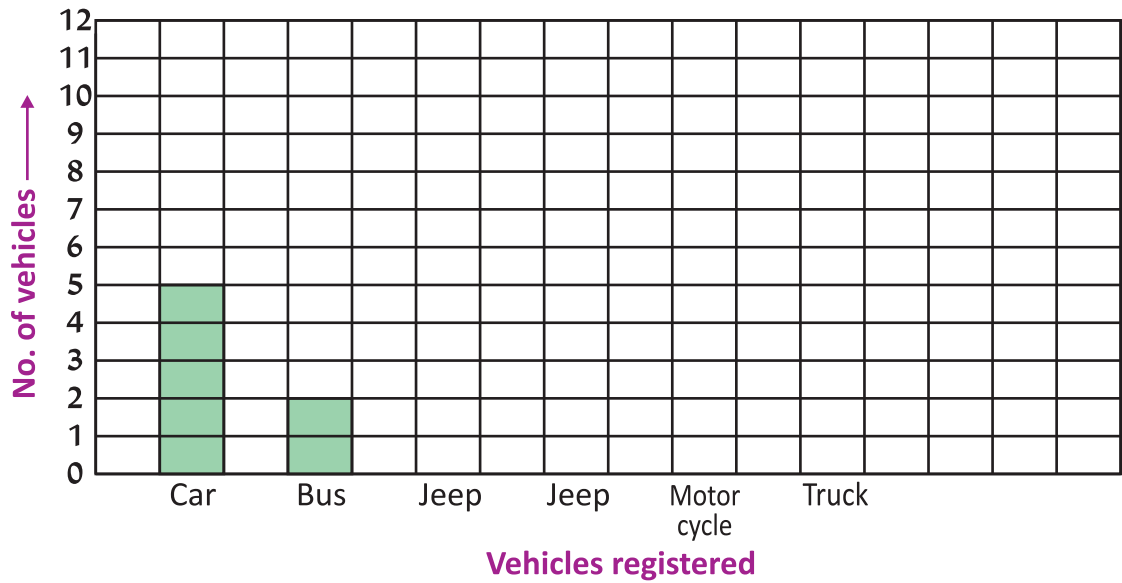
- What is the number of people who like black colour?
- By how many people is red colour liked?

Bar Graph

The District Transport Office, Hanumangarh has given a table of number of vehicles registered on Monday .

Make a bar graph from the given table -

Vehicles	Number
Car	5
Bus	2
Jeep	4
Motorcycle	10
Truck	2



Practice Work

1. The favourite games of the students of class 5 of GPS Pratapgarh are given in the table below. Complete the table and answer the questions given below-

Game	Sign (General)	Tally Mark (Mathematical System)	Number
Footbal	✓✓✓✓✓✓✓✓✓✓✓✓✓✓	|||| ||| ||	12
Cricket	✓✓✓✓✓		
Kho-Kho	✓✓✓✓✓✓		
Kabadi	✓✓✓✓✓✓✓✓		

Complete the table and answer the questions given below -

- (i) Which is the most liked game?
 - (ii) Which is the least liked game?
 - (iii) How many students are there in class 5?
 - (iv) What is the total number of students who like cricket and kho-kho?
2. The daily pocket money (in rupees) given to the students of class 8 of GUPS Debari is as follows- 5, 4, 3, 8, 10, 6, 4, 8, 5, 3, 6, 10, 8, 4, 3, 10, 5, 5, 8, 4 and 6.
Display it in the form of a table and answer the following questions -
- (i) How many students receive 5 rupees or less as pocket money?
 - (ii) How many students receive 8 rupees or more as pocket money?
 - (iii) What is the total number of students in class 8?
3. The number of vehicles parked in the premises of Tehsil Office Ringas is given below. Represent them through bar graph and answer the following questions -

Vehicles	Number
Motorcycle	13
Scotor	7
Car	3
Jeep	2
Cycle	8

- (I) What is the total number of two-wheelers parked in the campus?
- (ii) What is the total number of four-wheelers parked in the campus?

4. A pictograph of the number of patients admitted in the Community Health Centre, Badi Sadri in the last 5 days is given below. Understand it and fill in the blanks-

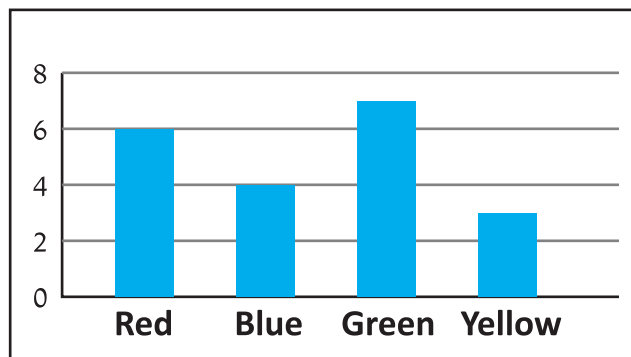
Day	Patients admitted	Number
Monday	☺☺ III	23
Tuesday	☺☺☺ I	.....
Wednesday	☺☺☺☺☺ III I	.....
Thursday	☺☺☺ III	.....
Friday	☺ III II	.....

- (I) How many patients are indicated with the symbol ☺ in the table?
(ii) On which day the maximum number of patients were admitted?
(iii) How many total patients were admitted in these 5 days?
5. Represent the student attendance of Monday in GUPS Rapakhedi, in the pictograph, assuming ☺ = 5 students and I = 1 student -

Class	Students present	Pictograph
I	18	
II	16	
III	13	
IV	7	
V	11	

6. Riya and Tanu asked the children in their class about their favourite colour and displayed in the given bar graph. Read it and answer the following questions.

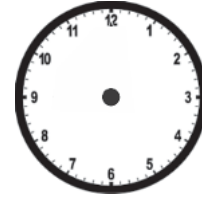
- (i) Which colour did the children like the most?
(ii) How many children liked blue colour?
(iii) Which colour was liked by only three children?



We Learnt and Understood - 4



1. Draw the hour and minute hands of the given clocks according to the following time-



- (i) 6 o'clock 00 minutes (ii) 3 o'clock 45 minutes (iii) 11 o'clock 35 minutes

2. Write the names of Hindi and English months -

3. Convert the following time -

- (i) 5 hours into minutes (ii) 2 hours 45 minutes into minutes
(iii) 6 hours 20 minutes into minutes (iv) 15 minutes into seconds
(v) 10 minutes 15 seconds into seconds (vi) 3 days 12 hours into hours

4. Find the total time -

- (i) 4 hours 35 minutes and 2 hours 15 minutes (ii) 1 hour 45 minutes and 3 hours 30 minutes
(iii) 20 minutes 40 seconds and 15 minutes (iv) 5 minutes 55 seconds and 2 minutes 15 seconds

5. Find the difference in time -

- (i) 9 hours 40 minutes and 5 hours 25 minutes (ii) 12 hours 10 minutes and 8 hours 50 minutes
(iii) 30 minutes 15 seconds and 18 minutes (iv) 1 hour 20 minutes and 45 minutes

6. Solve -

- (i) If the price of samosa in the school canteen is ₹18 and the price of juice is ₹22, then what will be the total price of both?
(ii) You have ₹100, if you buy a book for ₹35 and a pencil box for ₹45, then how much money will be left?
(iii) Tina bought a purse for ₹50 and slippers for ₹75. She paid ₹200. How much money did she get back?

7. Mutual conversion of Rupees and Paise -

- (i) Convert 475 paise into rupees.
- (ii) Write ₹9.25 in paise.
- (iii) How will you write 680 paise in rupees and paise?
- (iv) How many rupees will 1000 paise be?

8. Daily life problems related to Currency -

- (i) Mother spent ₹35 on vegetables, ₹60 on fruits and ₹45 on milk. What was the total expenditure?
- (ii) Rahul has ₹500. He bought a pencil box for ₹120, a notebook for ₹180 and a water bottle for ₹75. How much money will he have left?
- (iii) A girl bought a skirt for ₹200 and a T-shirt for ₹150. If she gives ₹500 to the shopkeeper, how much money will she get back?
- (iv) At a shop, the price of sweets is ₹300, the price of namkeen is ₹250 and the price of chocolate is ₹100. If a customer buys sweets, namkeen and chocolate and gives ₹1000 to the shopkeeper, how much money will he get back?
- (v) Ravi gave 2 notes of ₹50, 3 notes of ₹20 and 5 coins of ₹10. How much money did he give in total?

9. Find the Perimeter -

- (i) The length of a courtyard is 25 meters and the width is 10 meters. What will be the perimeter of the courtyard?
- (ii) The length of a rectangular table is 6 meters and the width is 4 meters. Find its perimeter.
- (iii) The length of the door of a classroom is 7 meters and the width is 3 meters. What will be the perimeter of the door?
- (iv) The length of a garden is 30 m and width 20 m. How much length of wire is required to fence all four sides of the garden?

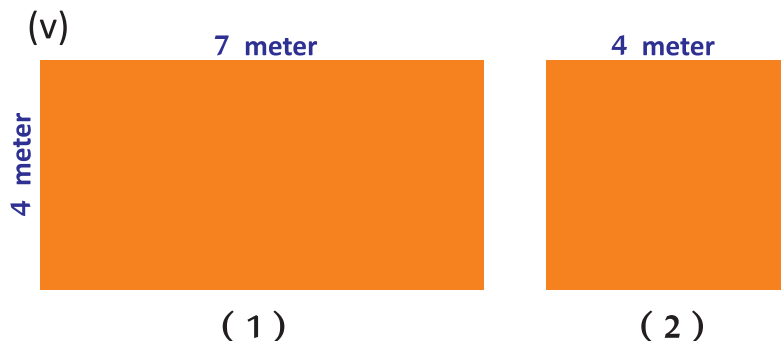


Figure (1)

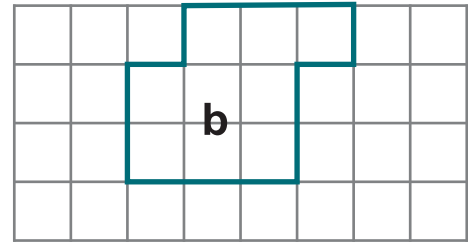
Total length of the fence =

Figure (2)

Total length of the fence =

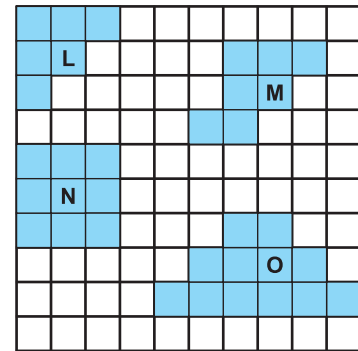
10. What is the difference between the numerical value of area and perimeter of the given figure?

- (a) 23 (b) 5
(c) 14 (d) 9 ()



11. Choose a pair from the given figures which has the same perimeter.

- (a) L&M (b) M&N
(c) L&N (d) N&O ()



12. Which of the following figures has the largest area?

- (a) (b) (c) (d) ()

= 1 ones

13. Students of class 4 scored 2, 4, 3, 2, 4, 3, 2, 5, 1, 3, 1, 3, 2, 4 and 5 marks in a test of Mathematics subject. Fill in the table given below with these marks and write answers to the questions given below -

- (i) How many number of students got 3 marks.
(ii) How many number of students are there in the class?

Digit	Tally mark	No. of Students
1		
2		
3		
4		
5		

14. The number of students who were absent from school during the last week is given in the table. Represent it through a bar graph .

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Represent Students	5	4	6	4	7	3