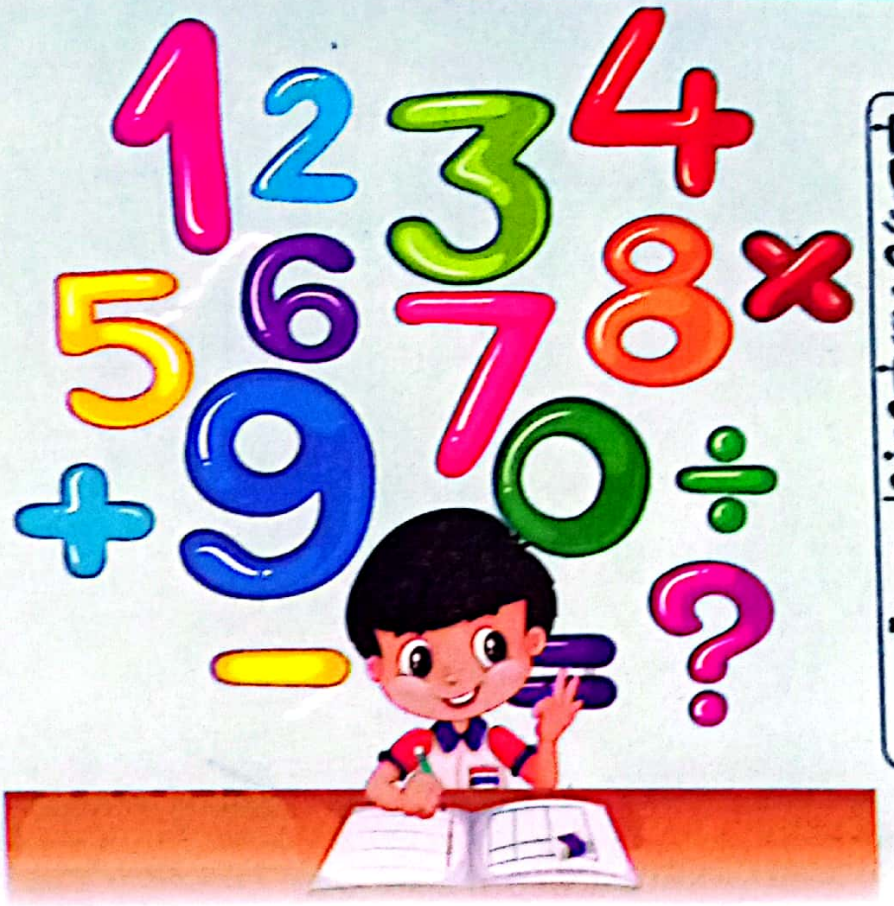
Textbook

2

Mathematics

Test Edition

Based on Single National Curriculum 2020



یہ کتاب محکمہ تعلیم حکومت بلوچستان کی جانب سے نئے تعلیمی سال 2025 کیلئے مفت تقسیم کی جارہی ہے ادارہ قابل فروخت ہے

حکومت بلوچستان کا پروگرام "معیاری تعلیم سب کے لیے"

Balochistan Textbook Board, Quetta

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شروع اللہ کے پاک نام سے جو بڑا مہربان نہایت رحم والا ہے۔

Textbook

Mathematics

Grade 2

Based on Single National Curriculum

One Nation, One Curriculum

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Textbook

Mathematics

Grade 2

Experimental Edition

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APPEAL

Balochistan Textbook Board is committed to ensure the publication of quality Textbooks in line with the approved Curriculum. These textbooks are the outcome of intellectual contribution of renowned educationists, researchers and subject experts. Despite our constant endeavors, possibilities of inadvertent errors cannot be ruled out and there is always margin of improvement. Therefore, we always look forward to constructive feedback from students, teachers, parents and society at large. In this regard a feedback and textbooks review mechanism (though online portal) has been established at Balochistan Textbook Board. The feedback received will be referred to the Research Center, recently established at Balochistan Textbook Board for analysis and drawing conclusions. We are highly hopeful that this research based feedback analysis will prove to be catalyst in the improvement of overall quality of the Textbooks. Feedback regarding the provision of textbooks at school level can also be shared.

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CHAIRMAN
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Unit 1

Whole Numbers

Learning Outcomes

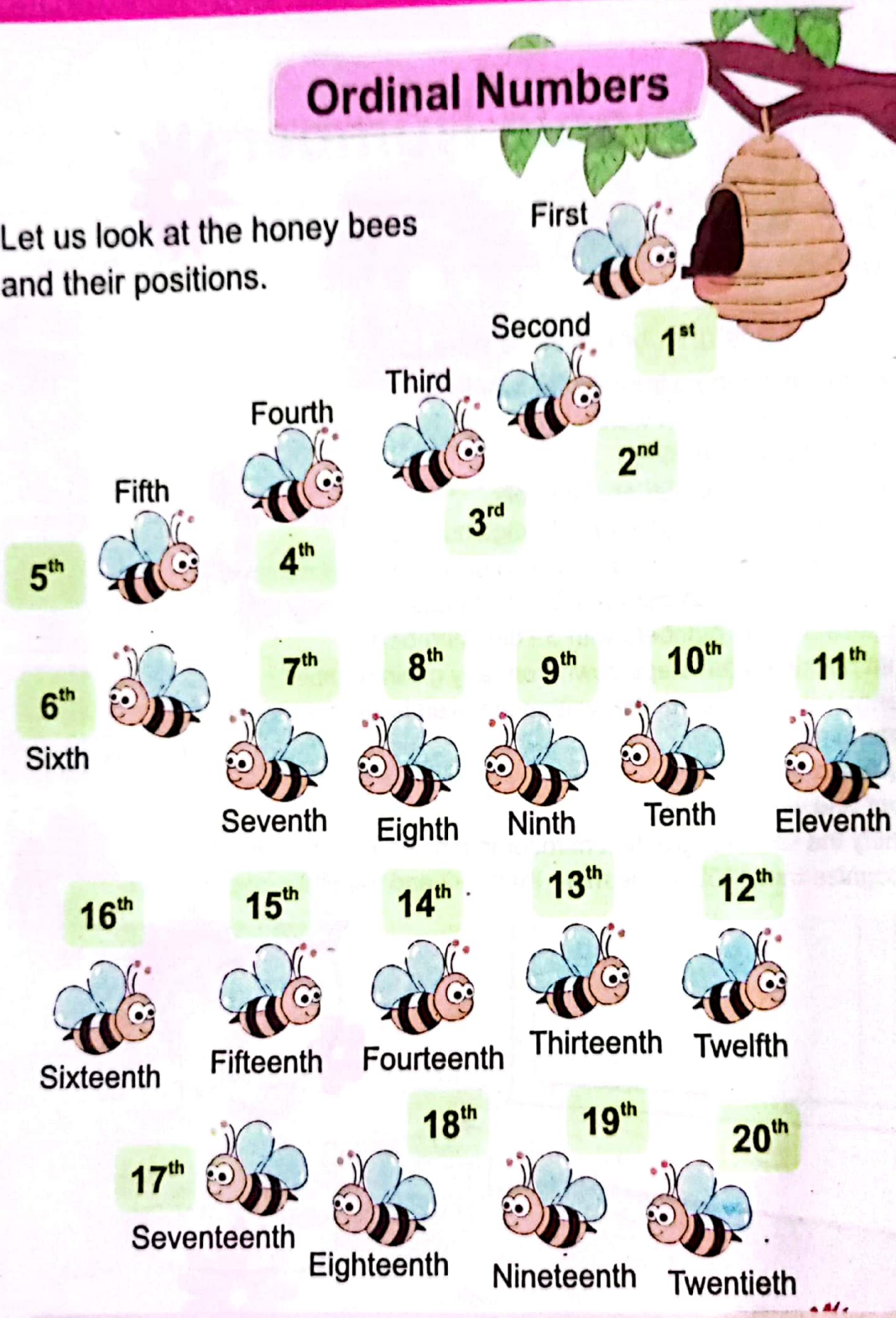
By the end of this unit, you will be able to:

- Write ordinal numbers from first to twentieth
- Write numbers 1-100 in words.
- Read numbers up to 999.
- Write numbers up to 999 as numerals.
- Recognize the place value of a 3 - digit number.
- Identify the place value of a specific digit in a 3 - digit number.
- Compare 2 - digit numbers with 3 - digit numbers.
- Compare 3 - digit numbers with 3 - digit numbers.
- Count backward ten steps down from any given number.
- Arrange numbers up to 999, written in mixed form, in ascending or descending order.
- Count and write in 10s.
- Count and write in 100s.
- Identify the smallest/greatest number in a given set of numbers.
- Recognize that 1000 is one more than 999 and the first 4-digit number.

Ali is studying in a library.
Can you count the books in the shelf?

Ordinal Numbers

Let us look at the honey bees and their positions.



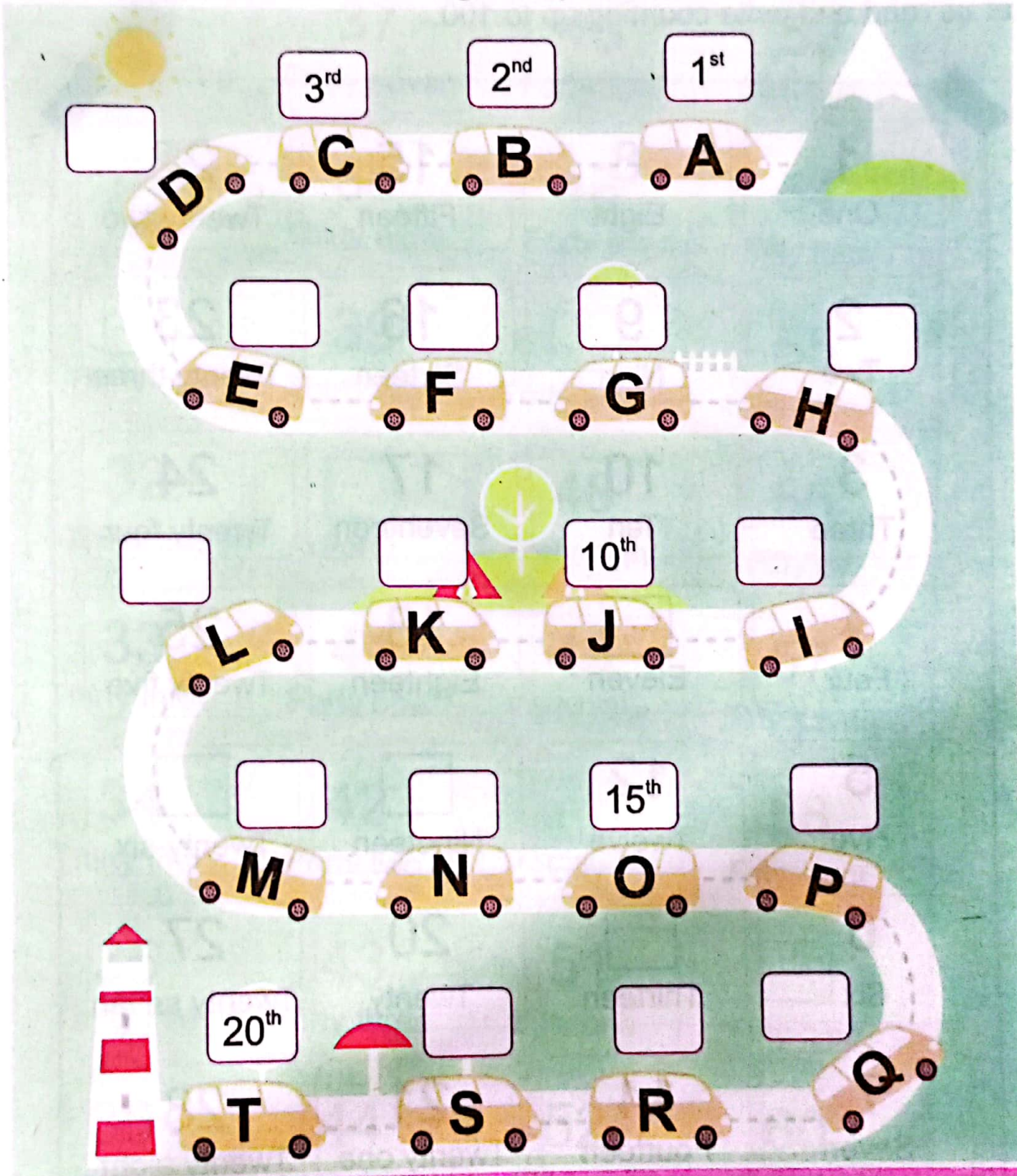
Ordinal numbers are used to represent the position of objects.

TEACHING POINT

For effective teaching and learning, use 'urdu or local language' as medium of instruction to explain the concept of numbers.
Ask the students to stand in a queue (or game) and explain their positions using ordinal numbers.

Exercise 1

Write the position of first 20 English alphabets.



TEACHING POINT

Ask the students to stand in a queue (or game) and explain their positions using ordinal numbers.

Counting up to 100 in words

Let us read and write counting up to 100.

1 One	8 Eight	15 Fifteen	22 Twenty two
2 Two	9 Nine	16 Sixteen	23 Twenty three
3 Three	10 Ten	17 Seventeen	24 Twenty four
4 Four	☐ Eleven	18 Eighteen	25 Twenty five
5 Five	12 Twelve	☐ Nineteen	☐ Twenty-six
6 Six	☐ Thirteen	20 Twenty	27 Twenty seven
7 Seven	14 Fourteen	21 Twenty one	28 Twenty eight

29 Twenty nine	37 Thirty seven	45 Forty five	53 Fifty three
30 Thirty	38 Thirty eight	46 Forty six	54 Fifty four
☐ Thirty one	39 Thirty nine	☐ Forty seven	55 Fifty five
32 Thirty two	☐ Forty	48 Forty eight	56 Fifty six
33 Thirty three	41 Forty one	49 Forty nine	57 Fifty seven
34 Thirty four	42 Forty two	☐ Fifty	58 Fifty eight
35 Thirty five	43 Forty three	51 Fifty one	☐ Fifty nine
36 Thirty six	44 Forty four	52 Fifty two	60 Sixty

61 Sixty one	69 Sixty nine	77 Seventy seven	 Eighty five
62 Sixty two	70 Seventy	78 Seventy eight	86 Eighty six
 Sixty-three	71 Seventy one	 Seventy nine	87 Eighty seven
64 Sixty four	 Seventy two	80 Eighty	88 Eighty eight
65 Sixty five	 Seventy three	81 Eighty one	89 Eighty nine
 Sixty six	74 Seventy four	82 Eighty two	 Ninety
67 Sixty seven	75 Seventy five	83 Eighty three	91 Ninety one
68 Sixty eight	76 Seventy six	84 Eighty four	92 Ninety two

93 Ninety three	94 Ninety four	☐ Ninety five	96 Ninety six
97 Ninety seven	☐ Ninety eight	99 Ninety nine	

100
One Hundred

Key Fact

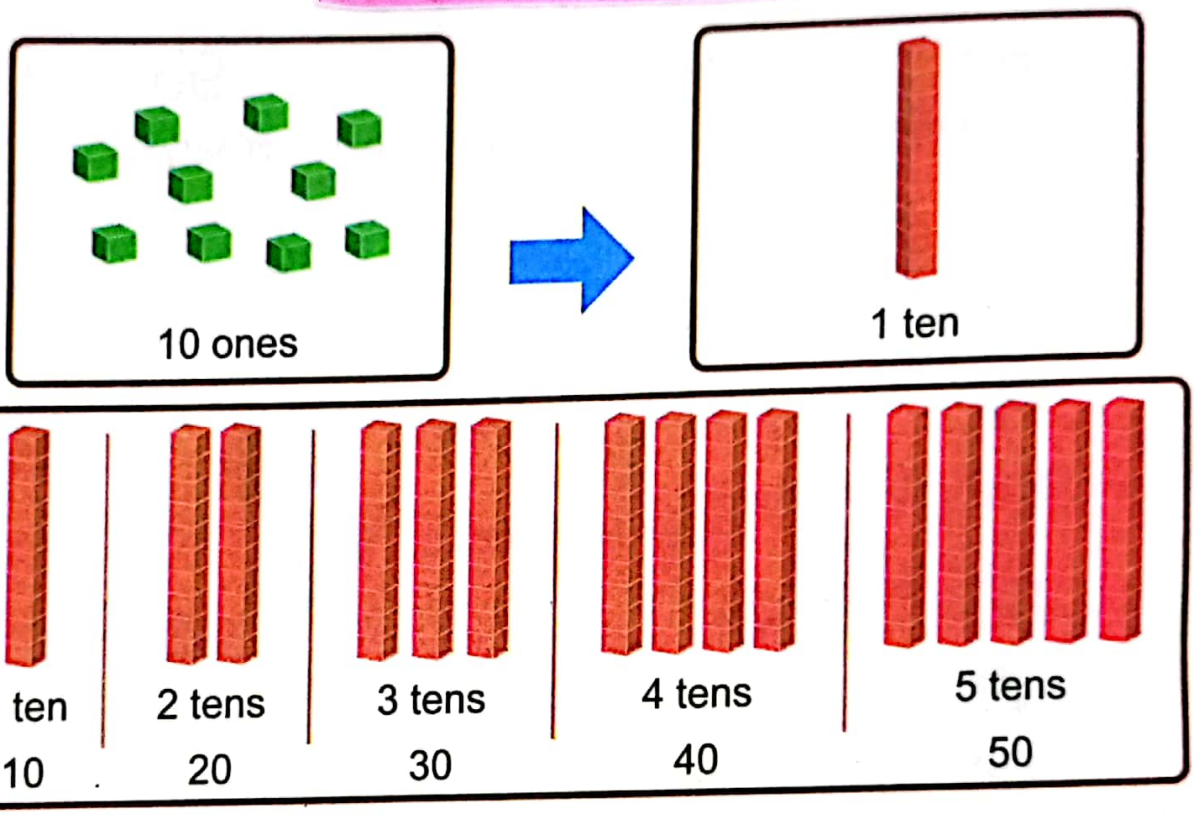
- 0 is the smallest 1-digit number.
- 9 is the greatest 1-digit number.
- 10 is the smallest 2-digit number.
- 99 is the greatest 2-digit number.

Try Yourself

Complete the following.

Eleven	11	Twenty four			46
Sixty two		Seventy nine			95

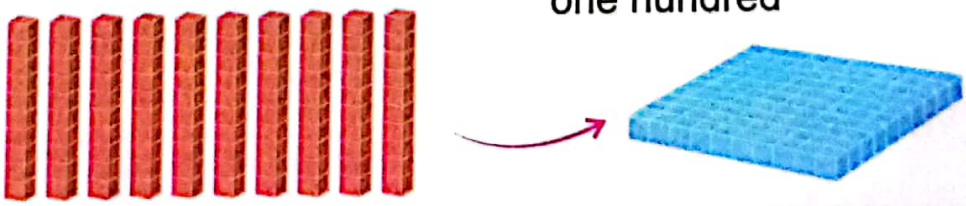
3-digit Numbers



If we keep counting in tens, we get

60 70 80 90 100

one hundred



10 tens

100 one hundred

Key Fact

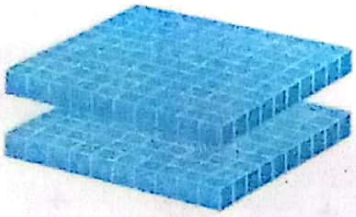
- 100 is the smallest 3-digit number.

Guide the students to read counting up to 100 and explain about the smallest 3-digit number '100'.

Let us count in 100s with the help of blocks.

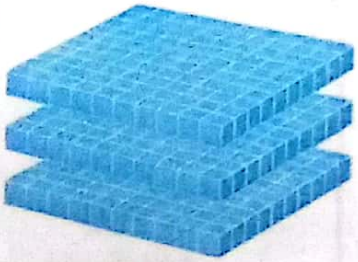
100

1 hundred



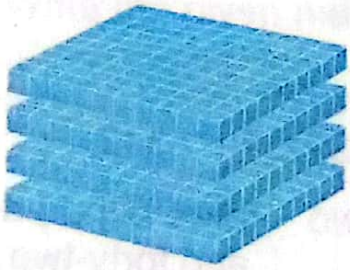
200

2 hundred



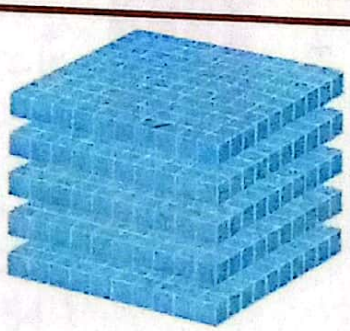
300

3 hundred



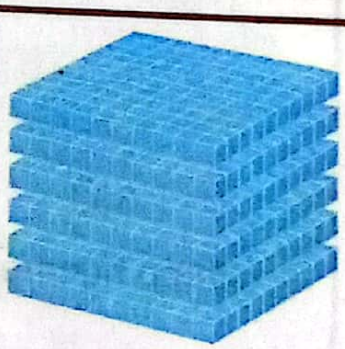
400

4 hundred



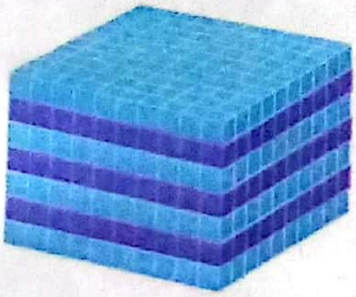
500

5 hundred



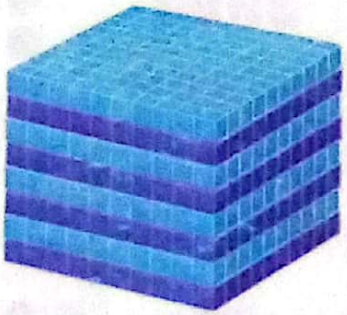
600

6 hundred



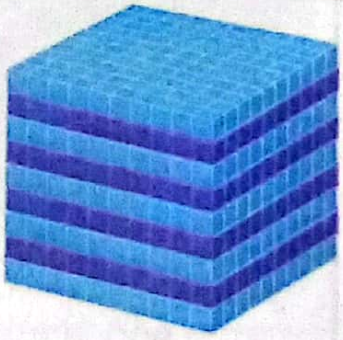
700

7 hundred



800

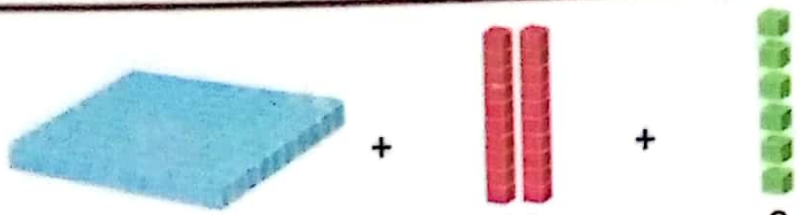
8 hundred



900

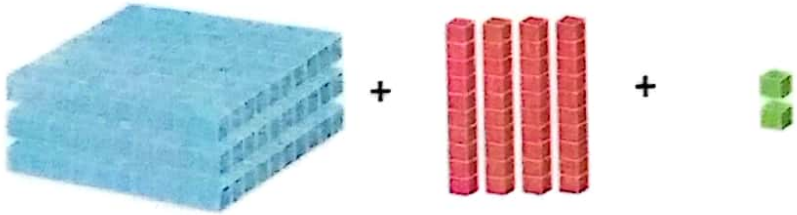
9 hundred

Now, we learn to read and write 3-digit numbers with the help of blocks.



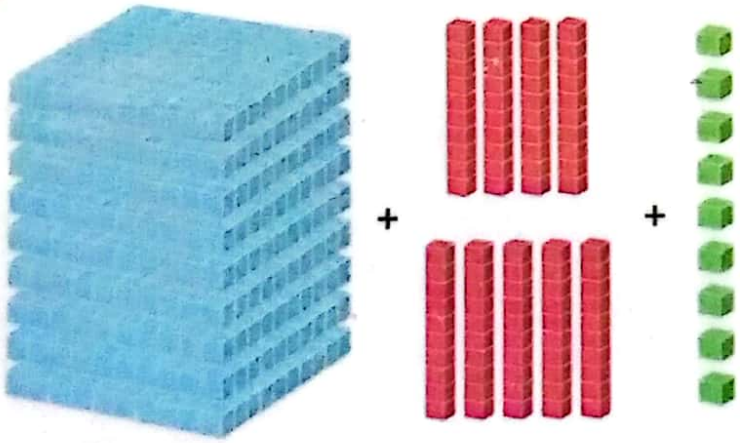
100 + 20 + 6 = 126

one hundred + twenty + six = one hundred and twenty-six



300 + 40 + 2 = 342

three hundred + forty + two = three hundred and forty-two



Key Fact

999 is the greatest 3-digit number.

900 + 90 + 9 = 999

nine hundred + ninety + nine = nine hundred and ninety-nine

Exercise 2

1. Write the given numbers in numerals.

Fifteen	Twenty two	Thirty six
Forty one	Fifty eight	Sixty three
Seventy	Eighty four	Ninety six

2. Write the given numbers in words.

18	21	33
45	54	69
76	80	99

3. Complete the following.

115	116	117			120	
238	239			242		
582			585			588
697		699				703
877	878				782	

4. Write the following numbers in numerals.

One hundred fifty two	
Three hundred thirty eight	
Four hundred fifty	
Five hundred nine	
Six hundred fifty eight	
Seven hundred eleven	
Eight hundred sixty eight	
Nine hundred ninety nine	

5. Write the following numbers in words.

75	Seventy five
32	
60	
89	
45	
79	
81	
90	

Place Value of 3-digit Numbers

The place value of each digit is found by its position in a number.

Let us find the place value of 2 and 6 in 26.

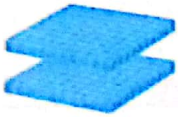
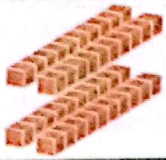
Hundreds	Tens	Ones
		
	2 tens	6 ones
	20	6

20 + 6 = 26

The digit 2 is in the tens place. So, its value is 20.

The digit 6 is in the ones place. So, its value is 6.

Let us find the place value of each digit in 245.

Hundreds	Tens	Ones
		
2 hundreds	4 tens	5 ones
200	40	5

200 + 40 + 5 = 245

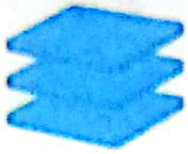
The digit 2 is in the hundreds place. So, its value is 200.

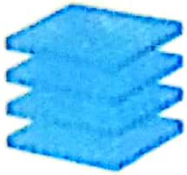
The digit 4 is in the tens place. So, its value is 40.

The digit 5 is in the ones place. So, its value is 5.

How many hundreds, tens and ones are there in the given numbers?

400, 308

Hundreds	Tens	Ones
		
300	00	8
3 hundreds	0 tens	8 ones

Hundreds	Tens	Ones
		
400	00	0
4 hundreds	0 tens	0 ones

Tell the place value of the coloured digits.

472, 238

3 tens = 30 ; 4 hundreds = 400

Try Yourself

How many hundreds, tens and ones are there in 333?

Explain the concept of place value of numbers using teaching aids (chart, abacus, etc). Write different numbers on board and guide the students how to identify the place value of numbers.

Exercise 3

1. How many hundreds, tens and ones are there in the given numbers?

6 ones 3 tens 1 hundreds — 136	☐ ones ☐ tens ☐ hundreds — 285	☐ ones ☐ tens ☐ hundreds — 412
☐ ones ☐ tens ☐ hundreds — 360	☐ ones ☐ tens ☐ hundreds — 507	☐ ones ☐ tens ☐ hundreds — 771
☐ ones ☐ tens ☐ hundreds — 649	☐ ones ☐ tens ☐ hundreds — 800	☐ ones ☐ tens ☐ hundreds — 999

2. Write the place value of the coloured digits.

125 — 2 tens	270 — ☐	598 — ☐
418 — ☐	600 — ☐	301 — ☐
764 — ☐	996 — ☐	850 — ☐

3. Write the number with the help of place value.

100 + 30 + 2 =	132	200 + 10 + 5 =	
500 + 50 + 0 =		400 + 0 + 2 =	
700 + 10 + 9 =		800 + 80 + 8 =	
600 + 00 + 0 =		900 + 90 + 6 =	

4. Write the number for the given place value.

Place Values of the Numbers	Numbers
1 ones, 2 hundreds, 5 tens	251
3 tens, 5 hundreds, 4 ones	
6 tens, 0 ones, 6 hundreds	
5 hundreds, 7 ones, 0 tens	
8 ones, 9 tens, 1 hundred	
0 ones, 3 hundreds, 0 tens	

Comparison of 3-digit Numbers

Fatima collects 435 coins and her friend collects 85 coins. Who has more coins?

To find who has more coins, we will compare both numbers.

435 is a 3-digit number.

85 is a 2-digit number.

So, 435 is the greater than 85.
Therefore, Fatima has more coins.

Hundreds	Tens	Ones
4	3	5
	8	5

When comparing a 3-digit number with a 2-digit number, the 3-digit number is always greater.

Let us compare 518 and 376.

Hundreds	Tens	Ones
5	1	8
3	7	6

First, we compare the digits in the hundreds place.
5 hundreds is greater than 3 hundreds.
So, 518 is greater than 376.

When comparing two or more 3-digit numbers, first we compare the digits in the hundreds place. The number with the greatest digit in the hundreds place is the greatest.

Let us compare 368 and 321.

Hundreds	Tens	Ones
3	6	8
3	2	1

First, we compare the digits in the hundreds place. Both digits are same.

Now, we compare the digits in the tens place. 6 tens is greater than 2 tens.

So, 368 is greater than 321.

Let us compare 469 and 463.

Hundreds	Tens	Ones
4	6	9
4	6	3

First, we compare the digits in the hundreds place. Both digits are same.

Now, we compare the digits in the tens place. Both digits are same.

Now, we compare the digits in the ones place. 9 ones is greater than 3 ones. So, 469 is greater than 463.

Key Fact

When comparing two 3-digits numbers, if the digit in the hundreds place, tens place and ones place are same, then both numbers are same.

Write different pairs of 3-digit numbers on board and explain how to compare numbers with the help of their place values without using symbols (<,>,=).

Smallest & Greatest Numbers

Can we find the smallest and the greatest numbers in these numbers?

Yes, we can find the smallest and the greatest numbers by comparing place value of the given numbers.

Hundreds	Tens	Ones
2	3	5
5	1	6
1	4	7

First, we compare the digits in the hundreds place.
5 hundred is the greatest.
So, 516 is the greatest number.
Similarly, 1 hundred is the smallest.
So, 147 is the smallest number.
Now, we write 235 516 147 in order as,

147 235 516

147 → The smallest number

516 → The greatest number

The arrangement of numbers from the smallest to the greatest is called ascending order.

516 → The greatest number

235

147 → The smallest number

The arrangement of the numbers from the greatest to the smallest is called descending order.

Write 162 203 168 in ascending and descending order.

First, we find the smallest and the greatest numbers by comparing place values of the given numbers. Then, we will write in order.

2 hundred is the greatest. So,203 is the greatest number.

Now, we compare 162 and 168. The digits in the hundreds place and tens place are same. But, 8 ones is greater than 2 ones. So, 162 is the smallest number.

Hundreds	Tens	Ones
1	6	2
2	0	3
1	6	8

Ascending order

162 168 203

Descending order

203 168 162

Exercise 4

1. Encircle the greater number.

18	121	248	98	198	218
600	599	749	497	899	999

2. Encircle the smaller number.

89	100	212	169	309	289
550	505	700	699	998	989

3. Encircle the greatest number.

115	85	135	214	275	250
390	388	369	689	700	599
809	799	690	998	899	999

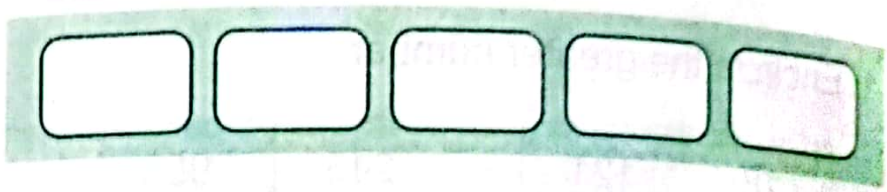
4. Encircle the smallest number.

105	98	101	318	381	183
510	500	482	142	241	412
689	660	691	989	998	889

5. Write the following numbers in the ascending order.

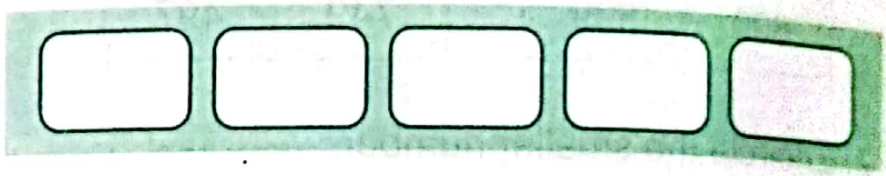
105 125

115 130 135



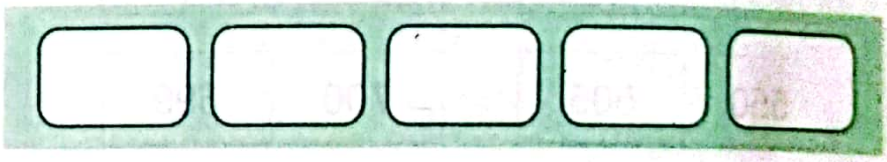
452 498

435 579 517



809 990

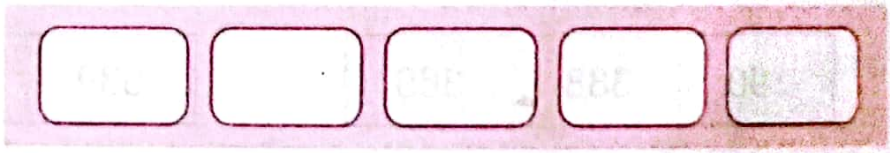
890 960 895



6. Write the following numbers in the descending order.

200 128

205 198 210

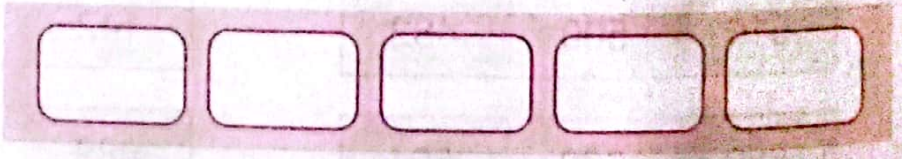


708 485

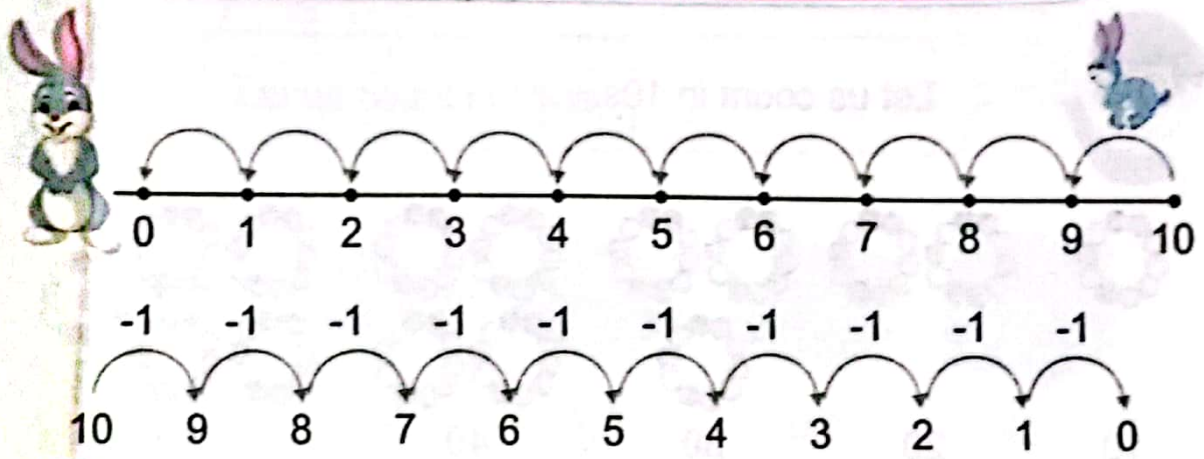
650 606 599

850 750

550 650 950



Backward Counting 10 Steps Down



Let us count and write backward counting 10 steps down from 112 and 343.

112	111	110	109	108	107	106	105	104	103	102
343	342	341	340	339	338	337	336	335	334	333

Try Yourself

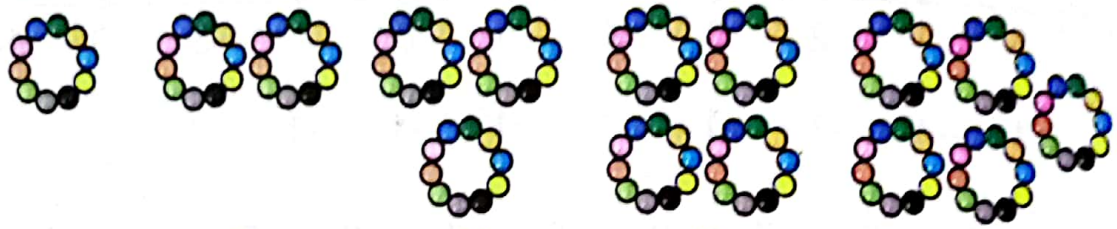
Write backward counting 10 steps down from the given numbers.

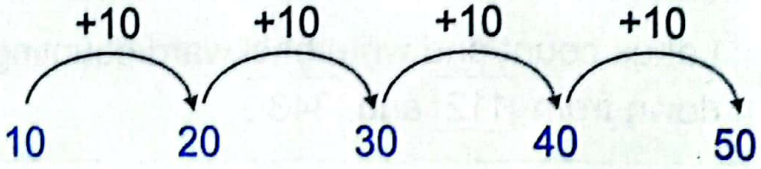
96										
125										
278										
350										

Divide the students in groups and give a number. Encourage and guide them to write backward counting 10 steps down from the given numbers on board.

Counting in 10s

Let us count in 10s.





Try Yourself

1. Complete the following by counting in 10s.

40		60			100
110			140	160	
360			400		

2. Write the next 6 numbers by counting in 10s.

90

220

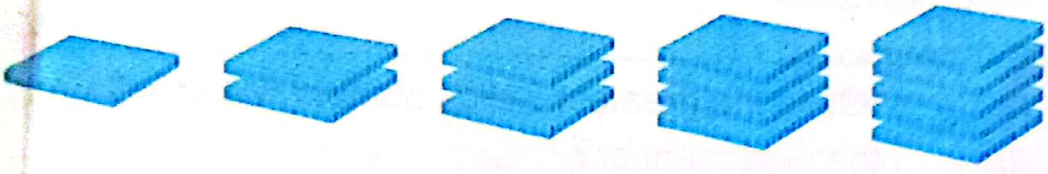
580

690

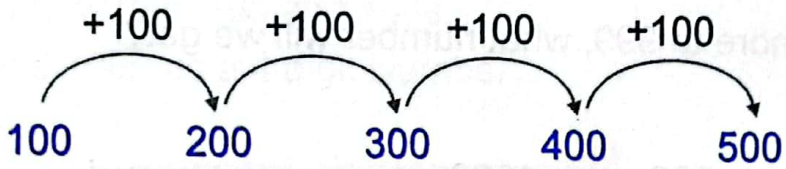
Encourage the students to read and write the next numbers from the given numbers by counting in 10s.

Counting in 100s

Let us count in 100s.



100 200 300 400 500



Try Yourself

1. Complete the following by counting in 100s.

300			600		
210	310			610	
450					950

2. Write the next 5 numbers by counting in 100s.

105	205	305	405	505	605
330					
190					
444					

Encourage the students to read and write the next numbers from the given numbers by counting in 100s.

One Thousand

Hundreds	Tens	Ones
9	9	9

999 is the greatest 3-digit number. What will be the next number?

If we add 1 more to 999, what number will we get?

$999 + 1 = 1000$ **one thousand**

1000 is the first 4-digit number.

In the place value chart, we represent one thousand.

Thousands	Hundreds	Tens	Ones
1	0	0	0

Key Fact

1000 is the smallest 4-digit number.

TEACHING POINT

Explain the children to recognize 1000 as 'one more than 999'. Tell them that 1000 is the first and the smallest 4-digit number.

I Have Learnt

- to use the ordinal numbers to represent the position of the objects.
- to read and write numbers up to 3-digits.
- to identify the place value of 3-digit numbers.
- to compare 3-digit numbers.
- to write 3-digits numbers in ascending and descending order.
- to count ten steps down from any given number.
- to count and write in 10s and 100s.
- to recognize 1000 as a 4 digit Number.

Vocabulary

- Ordinal Numbers
- Compare
- Ascending Order
- Descending Order

Review Exercise

1. Choose the correct option.

i) In words, 46 is written as _____ .

(a) thirty six (b) forty six (c) fifty six (d) sixty six

ii) Ordinal numbers are used to represent the _____ of the objects.

(a) shapes (b) quantity (c) position (d) place value

iii) Nine hundred and nine is written in numeral as _____ .

(a) 109 (b) 901 (c) 909 (d) 999

iv) In 158, the place value of 1 is _____ .

(a) 1 (b) 10 (c) 100 (d) 1000

v) Which number is the greatest?

(a) 999 (b) 990 (c) 909 (d) 989

2. Recall English alphabets and write the position of the given alphabets.

D 4th	G ____	J ____	M ____	I ____
T ____	Q ____	K ____	S ____	N ____

3. Write the numbers in numerals.

i) Eighty nine ____

ii) Three hundred and thirteen ____

iii) Five hundred six ____

iv) Seven hundred eighty six ____

v) Eight hundred fifty nine ____

vi) Nine hundred seventy six ____

4. Write the numbers in words.

i) 96 ____

ii) 269 ____

iii) 404 ____

iv) 890 ____

v) 967 ____

5. Write the place value of coloured digits.

589	8 tens	490		756	
800		850		915	

6. Write 10 steps down from the given number.

205										

7. Complete by counting in 10s.

180				220			

8. Complete by counting in 100s.

130			430				

9. Write the numbers in ascending and descending order.

415 105 145 514 501 405

Ascending order ( ) ( ) ( ) ( ) ( ) ( )

Descending order ( ) ( ) ( ) ( ) ( ) ( )

Unit 2

Number Operations
Addition

Learning Outcomes

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

- Add 1-digit numbers and 1-digit numbers.
- Add 1-digit numbers and 2-digit numbers with carrying.
- Add 2-digit numbers and 2-digit numbers with carrying.
- Solve real life number stories, involving addition of 2-digit numbers with carrying.
- Add 3-digit numbers and ones without carrying.
- Add 3-digit numbers and 2-digit numbers without carrying.
- Add 3-digit numbers and 3-digit numbers without carrying.
- Solve real life numbers stories involving addition of 3-digit numbers without carrying.
- Add 3-digit numbers and 1-digit numbers with carrying of tens and hundreds.

Have you ever listened to the bell of the balloon seller? Here he has 5 green balloons and 3 yellow balloons. How many balloons are there altogether?

Addition of 1-digit Numbers

I have 8 candies.

I have 5 candies.

Let us find together, how many candies both have?

	Tens	Ones
8		
+		
5		

→

Tens	Ones

→

Tens	Ones
1	3

When the sum of ones is more than 9 after adding, then 10 ones make 1 ten. Carry 1 ten to the tens place.

		T	O
Candies girl have	=	①	8
Candies boy have	+		5
Total candies	=	1	3

Step 1

Add the ones.
8 ones + 5 ones = 13 ones
because 10 ones = 1 ten
So, 13 ones = 1 ten + 3 ones
Carry ① ten to the tens place.

Step 2

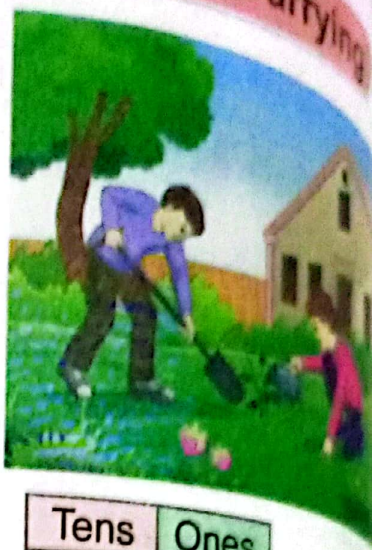
Add the tens.
① ten + 0 tens = 1 ten

So, both have 13 candies.

- For effective teaching and learning, use 'urdu or local language' as medium of instruction to explain the concept of addition.
- Explain the concept of tens using teaching aids/common objects (match sticks, pencils, etc).

Addition of 2-digit Numbers with Carrying

Ahmed's lawn has 25 plants. He planted 7 more plants in his lawn. How many plants are there in all?



We will find the total number of plants by adding 25 and 7.

25
+
7

Tens	Ones

→

Tens	Ones
3	2

		T	O
Plants in the lawn	=	①2	5
Plants Ahmed added	= +		7
Total plants	=	3	2

Step 2

Add the tens.
①ten + 2 tens = 3 tens

Step 1

Add the ones.
5 ones + 7 ones = 12 ones
because 10 ones = 1 ten
So, 12 ones = ①ten + 2 ones
Carry ① to the tens place.

So, Ahmed's lawn has 32 plants in all.

TEACHING POINT

Explain the concept of 'making ten from ones' and tell them that how to carry ten to the tens place.

Solve the 26 and 47.

Tens	Ones
①4	7
+ 2	6
7	3

Step 1

Add the ones.
7 ones + 6 ones = 13 ones
because 10 ones = 1 ten
So, 13 ones = ① ten + 3 ones
carry ① to the tens place.

Key Fact

When zero is added to any number, the result is the number itself.

Step 2

Add the tens.
① ten + 4 tens + 2 tens = 7 tens

Exercise 1

1. Solve the following.

T	O
1	7
+	5

T	O
3	5
+	6

T	O
4	8
+	7

T	O
5	5
+	8

T	O
8	9
+	3

T	O
2	5
+ 1	5

T	O
4	3
+ 2	9

T	O
5	6
+ 3	5

T	O
6	8
+ 2	5

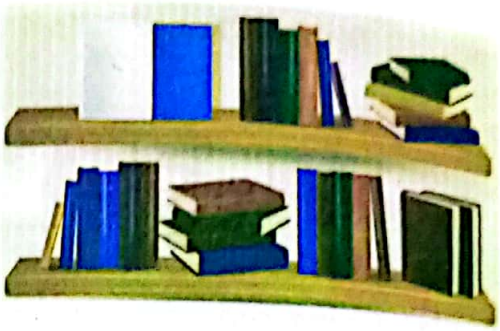
T	O
1	2
+ 7	9

T	O
2	8
+ 5	4

T	O
6	7
+ 2	6

2. Amna has 24 books and Hina has 8 books. How many books do both girls have altogether?

		T	O
Books Amna has	=		
Books Hina has	= +		
Total books	=		



3. Raza

There are 35 students in my class.

Maryam

There are 28 students in my class.

How many students are there in both classes?

		T	O
Students in Maryam's class	=		
Students in Raza's class	= +		
Total students	=		

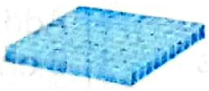
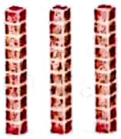
4. A fruit seller sold 36 kinnos in the morning and 48 kinnos in the evening. How many kinnos did he sell in all?

		T	O
Kinnos sold in the morning	=		
Kinnos sold in the evening	= +		
Total Kinnos sold	=		

Addition of 3-digit Numbers without Carrying

Sajid likes to collect coins. He has 132 coins. His brother gives 6 coins to him. How many coins does Sajid have altogether?

Add 132 and 6 to find the total number of coins.

	Hundreds	Tens	Ones
132			
+			
6			
	1	3	8

		H	T	O
Coins Sajid has	=	1	3	2
Coins given by his brother	+			6
Total coins	=	1	3	8

Step 1

Add the ones.
2 ones + 6 ones = 8 ones

Step 2

Add the tens.
3 tens + 0 tens = 3 tens

Step 3

Add the hundreds.
1 hundred + 0 hundreds = 1 hundred

Key Fact

When adding 3-digit numbers, first add the ones, then the tens and finally the hundreds.

So, Sajid has 138 coins altogether.

Add 316 and 82.

	Hundreds	Tens	Ones
	3	1	6
+		8	2
	3	9	8

Step 2

Add the tens.
1 ten + 8 tens = 9 tens

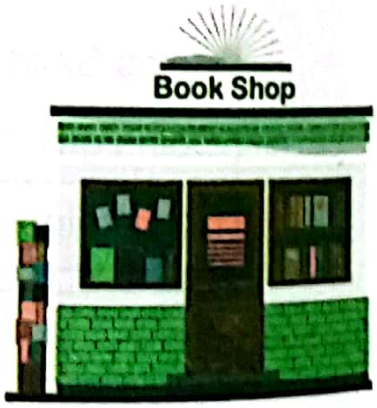
Step 1

Add the ones.
6 ones + 2 ones = 8 ones

Step 3

Add the hundreds.
3 hundreds + 0 hundreds = 3 hundreds

A bookseller sold 435 books on Tuesday and 362 books on Wednesday. How many books did he sell in both days altogether?



Hint

First add the ones, then the tens and finally the hundreds.

		H	T	O
Books sold on Tuesday	=	4	3	5
Books sold on Wednesday	= +	3	6	2
Total books sold	=	7	9	7

So, 797 books sold in two days.

Exercise 2

1. Solve the following.

H	T	O
2	5	2
+		6

H	T	O
1	6	5
+		3

H	T	O
5	6	8
+		1

H	T	O
6	8	0
+		6

H	T	O
3	4	5
+	3	4

H	T	O
4	2	6
+	7	0

H	T	O
4	4	1
+	5	8

H	T	O
6	0	7
+	8	2

H	T	O
2	7	2
+ 1	2	7

H	T	O
5	6	2
+ 4	3	7

H	T	O
6	0	8
+ 2	9	1

H	T	O
2	4	2
+ 5	4	4

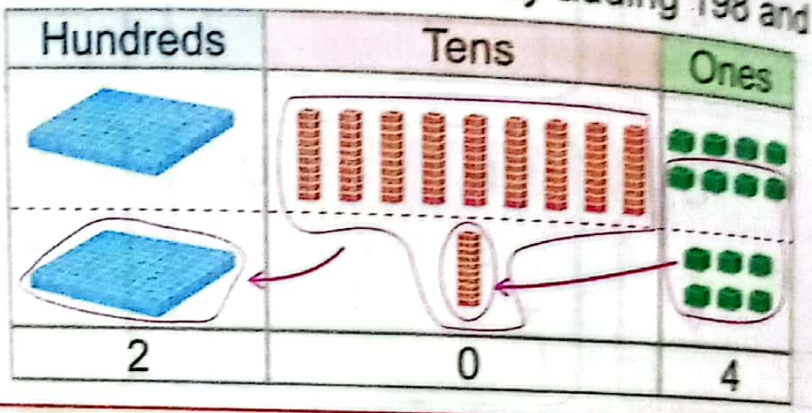
2. Rehan likes to play cricket. He buys a bat for Rs. 390 and a ball for Rs. 208. How much amount does Rehan spend in all?

		H	T	O
Cost of the bat	=			
Cost of the ball	= +			
Total amount spent	=			

Addition of 3-digit Numbers with Carrying

There are 198 students in my school. 6 more students get admission. Find the total number of students in the school.

We can find the total number of students by adding 198 and 6.



When the sum of tens is more than 9 after adding, then 10 tens make 1 hundred. Carry 1 hundred to the hundreds place.

	H	T	O
Number of students =	① 1	① 9	8
New students = +			6
Total students =	2	0	4

Step 1

Add the ones.
8 ones + 6 ones = 14 ones
because 10 ones = 1 ten
So, 14 ones = 1 ten + 4 ones
Carry ① ten to the tens place

Step 2

Add the tens.
① ten + 9 tens + 0 tens = 10 tens
because 10 tens = 1 hundred
Carry ① hundred to the hundreds place.

Step 3

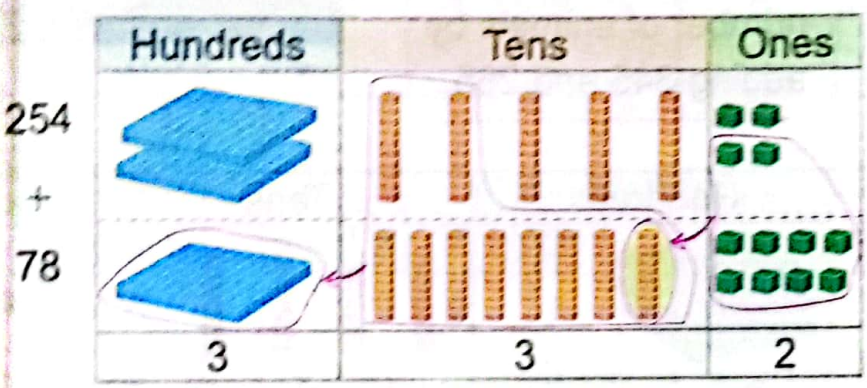
Add the hundreds.
① hundred + 1 hundred
= 2 hundreds

So, total number of students in the school is 204.

Explain the students how to make hundred with tens and tell them that how to carry hundred to the hundreds place.

In our village, there is a garden. There are 254 mango trees and 78 guava trees. How many trees are there in the garden altogether?

We will find the total number of trees by adding 254 and 78.



	H	T	O
Mango trees =	(1)2	(1)5	4
Guava trees = +		7	8
Total trees =	3	3	2

Step 1

Add the ones.
4 ones + 8 ones = 12 ones
12 ones = 1 ten + 2 ones
Carry (1) ten to the tens place.

Step 2

Add the tens.
(1) ten + 5 tens + 7 tens = 13 tens
13 tens = 1 hundred + 3 tens
Carry (1) hundred to the hundreds place.

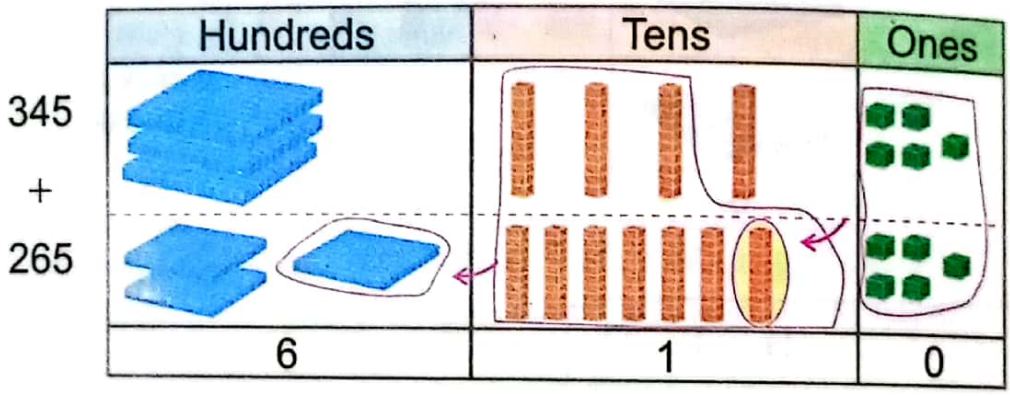
Step 3

Add the hundreds.
(1) hundred + 2 hundreds = 3 hundreds

So, there are 332 trees in the garden altogether.

In an animal farm, there are 345 cows and 265 sheep.
How many animals are there in the farm altogether?

We will find the total number of animals by adding 345 and 265.



	H	T	O
Cows in the farm =	①3	①4	5
Sheep in the farm = +	2	6	5
Total animals =	6	1	0

Step 1
Add the ones.
5 ones + 5 ones = 10 ones
because 10 ones = 1 ten
Carry ① ten to the tens place.

Step 2
Add the tens.
① ten + 4 tens + 6 tens = 11 tens
because 10 tens = 1 hundred
So, 11 tens = 1 hundred + 1 ten.
Carry ① hundred to the hundreds place.

Step 3
Add the hundreds.
① hundred + 3 hundreds
+ 2 hundreds = 6 hundreds

So, there are 610 animals in the farm altogether.

Exercise 3

1. Solve the following.

H	T	O
1	8	5
+		6

H	T	O
2	4	9
+		6

H	T	O
5	7	4
+		7

H	T	O
7	9	5
+		8

H	T	O
8	9	7
+		3

H	T	O
5	3	3
+	4	9

H	T	O
3	5	4
+	6	8

H	T	O
2	0	9
+	9	1

H	T	O
8	2	7
+	7	6

H	T	O
7	3	9
+	6	2

H	T	O
2	2	3
+ 1	5	8

H	T	O
3	8	4
+ 1	2	6

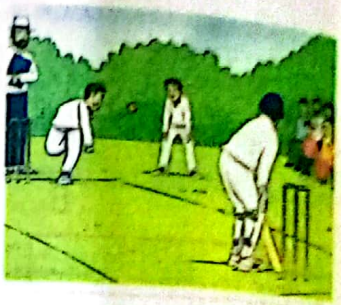
H	T	O
4	9	3
+ 3	0	9

H	T	O
6	1	6
+ 2	8	8

H	T	O
3	9	5
+ 2	9	8

2. In a test match, Pakistan team scored 426 runs in the first innings and 378 runs in the second innings. Find the total runs scored by the Pakistan team in both innings.

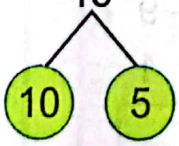
		H	T	O
Runs in first innings	=	☐	☐	☐
Runs in second innings	= +	☐	☐	☐
Total runs in both innings	=	☐	☐	☐



Addition of Numbers using Mental Strategy

Add 20 and 15 using mental strategy.

20 + 15



20 + 10 = 30

0 + 5 = 5

20 + 15 = 35

Add 32 and 17 using mental strategy.

32 + 17

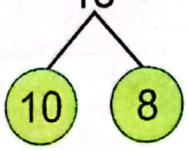
30 + 10 = 40

2 + 7 = 9

32 + 17 = 49

Add using mental strategy and complete the following.

(a) 20 + 18

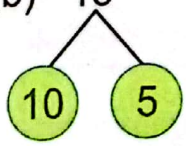


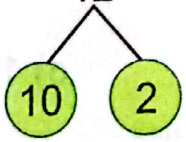
20 + 18 = ☐

20 + ☐ = ☐

0 + ☐ = ☐

(b) 15 + 12





15 + 12 = ☐

10 + ☐ = ☐

☐ + 2 = ☐

(c) 30 + 10 = ☐ (d) 20 + 10 = ☐ (e) 30 + 20 = ☐

(f) 10 + 12 = ☐ (g) 20 + 11 = ☐ (h) 14 + 12 = ☐

(i) 23 + 15 = ☐ (j) 35 + 13 = ☐ (k) 42 + 7 = ☐

I Have Learnt

- to add numbers up to 3-digits without carrying.
- to add numbers up to 3-digits with carrying.
- When adding 3-digit numbers, first add the ones, then the tens and finally add the hundreds.
- When the sum of ones is more than 9 after adding, then 10 ones make 1 ten. Carry 1 ten to the tens place.
- When the sum of tens is more than 9 after adding, then 10 tens make 1 hundred. Carry 1 hundred to the hundred place.
- to use addition of 3-digit numbers in real life.

Vocabulary

- Addition
- Without carrying addition
- With carrying addition

Review Exercise

1. Choose the correct option.

i) 25 + 0 = _____

a) 250 b) 205 c) 25 d) 0

ii) 100 + 10 = _____

a) 1000 b) 101 c) 100 d) 110

iii) When adding 3-digit numbers, first add the _____.

a) ones b) tens c) hundreds d) carrying digit

iv) When zero is added to any number, the result is the _____.

a) zero b) number itself

c) greater number d) smaller number

v) Adding 3-digit numbers, we add _____ at last.

a) ones b) tens c) hundreds d) carrying digit

2. Solve the following.

T	O
	9
+	6

T	O
1	6
+	8

T	O
5	9
+	9

T	O
7	8
+	2

T	O
3	7
+ 2	5

T	O
5	1
+ 3	9

T	O
6	4
+ 1	6

T	O
7	3
+ 1	8

H	T	O
2	5	4
+		5

H	T	O
3	2	3
+		6

H	T	O
6	0	9
+	3	0

H	T	O
8	1	2
+	7	7

H	T	O
3	1	2
+ 1	8	5

H	T	O
6	0	2
+ 2	9	6

H	T	O
4	5	7
+		8

H	T	O
6	9	4
+		7

H	T	O
3	5	7
+	5	6

H	T	O
5	8	9
+	8	8

H	T	O
7	9	8
+ 1	3	3

H	T	O
5	5	5
+ 2	9	8

H	T	O
6	6	6
+ 1	9	5

H	T	O
5	9	9
+ 3	0	8

H	T	O
7	7	7
+ 1	6	9

H	T	O
6	9	6
+ 2	9	4

H	T	O
4	5	9
+ 3	6	7

H	T	O
8	8	8
+	7	7

Hint

Look and write the price of toys from the given pictures.

3. Ahmed buys a car and a ball from toyshop. How much amount does Ahmed pay to the shopkeeper?

		H	T	O
Car price	=			
Ball price	= +			
Amount paid	=			

4. Amna buys a teddy bear and a ball from the toyshop. How much amount does she pay to the shopkeeper?

		H	T	O
Teddy bear price	=			
Ball price	= +			
Amount paid	=			

5. Irfan buys a bicycle and a car from toyshop. How much amount does Irfan spend?

		H	T	O
Bicycle price	=			
Car price	= +			
Amount spend	=			

6. Iram wants to buy a teddy bear and a bicycle from toyshop. How much amount does Iram need to buy both toys?

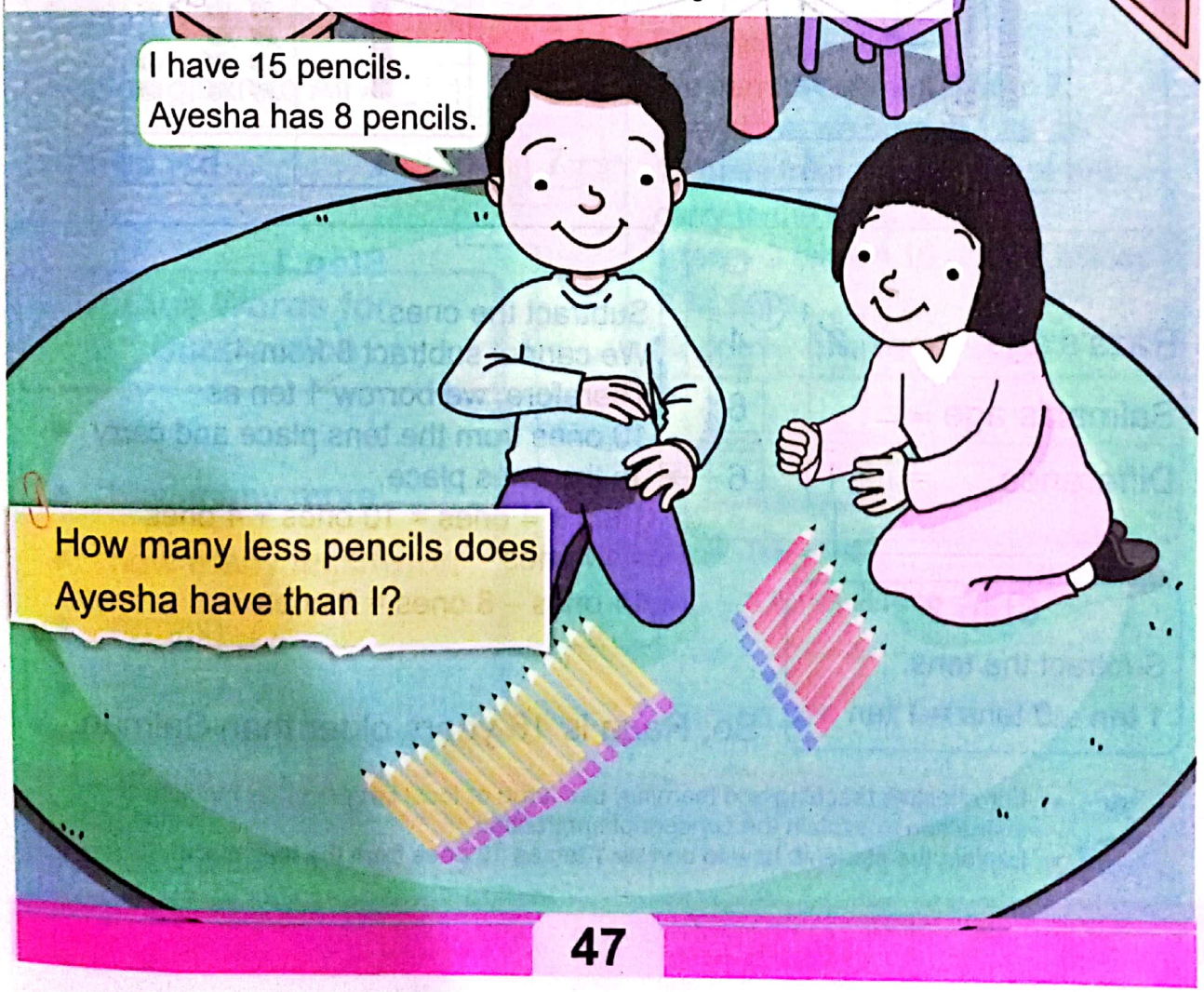
		H	T	O
Teddy bear price	=			
Bicycle price	= +			
Amount needed	=			

Subtraction

Learning Outcomes

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

- Subtract 1-digit numbers from 2-digit numbers with borrowing.
- Subtract 2-digit numbers from 2-digit numbers with borrowing.
- Solve real life numbers stories of subtraction of 2-digit numbers with borrowing.
- Subtract 1-digit numbers from 3-digit numbers without borrowing.
- Subtract 2-digit numbers from 3-digit numbers without borrowing.
- Subtract 3-digit numbers from 3-digit numbers without borrowing.
- Solve real life number stories of subtraction up to 3-digits without borrowing.
- Subtract 1-digit numbers from 3-digit numbers with borrowing.
- Subtract 2-digit numbers from 3-digit numbers with borrowing.
- Subtract 3-digit numbers from 3-digit numbers with borrowing.
- Solve real life number stories of subtraction up to 3-digit numbers with borrowing.
- Analyze simple situations identifying correct operation of addition and subtraction with carrying/borrowing in mixed form.
- Subtract numbers up to 50 using mental calculation strategies.



Subtraction of 1-digit Numbers from 2-digit Numbers with Borrowing

Raza

My age is 8 years.

My age is 24 years.

Salman

We can tell who is older by subtracting 8 from 24.

Tens	Ones
2	4

→

Tens	Ones
1	6

	T	O
Raza's age =	~~2~~ 1	10 4
Salman's age = –		8
Difference =	1	6

Step 1

Subtract the ones.
We cannot subtract 8 from 4.
Therefore, we borrow 1 ten as 10 ones from the tens place and carry to the ones place.
1 ten + 4 ones = 10 ones + 4 ones
= 14 ones
14 ones – 8 ones = 6 ones

Step 2

Subtract the tens.
1 ten – 0 tens = 1 ten

So, Raza is 16 years older than Salman.

TEACHING POINT

- For effective teaching and learning, use 'urdu or local language' as medium of instruction to explain the concept of subtraction.
- Explain the students how to borrow 1 ten as 10 ones from the tens place.

Subtraction of 2-digit Numbers with Borrowing

Nida has 24 apples.
She gives 15 apples to Ali.
How many apples are left with Nida?

We can tell how many apples are left with Nida by subtracting 15 from 42.

	T	O
Apples Nida has =	~~4~~ 3	(10) 2
Apples given to Ali = −	1	5
Apples left =	2	7

Step 1

Subtract the ones.
We cannot subtract 5 from 2.
Therefore, we borrow 1 ten as 10 ones from the tens place and carry to the ones place.
1 ten + 2 ones = 10 ones + 2 ones = 12 ones
12 ones – 5 ones = 7 ones

Step 2

Subtract the tens.
3 tens – 1 ten = 2 tens

Clue Words for Subtraction

- left
- how many more
- how many less/fewer
- remain
- difference

So, 27 apples are left with Nida.

TEACHING POINT Describe the real life examples on subtraction and explain the clue words for subtraction.

Exercise 1

1. Solve the following.

T	O
2	3
–	5

T	O
3	4
–	8

T	O
9	1
–	2

T	O
4	0
–	6

T	O
6	3
– 2	7

T	O
5	7
– 1	8

T	O
9	5
– 3	6

T	O
6	1
– 4	2

T	O
7	0
– 4	1

T	O
8	2
– 5	5

T	O
9	8
– 5	9

T	O
8	0
– 7	2

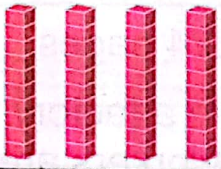
2. There are 45 passengers in a bus. If there are 18 women, how many men are there?

	T	O
Passengers in the bus =		
Number of women =		
Number of men =		

Subtraction of 3-digit Numbers without Borrowing

In a goat farm, there are 148 goats. If 5 goats are sold, how many goats are left?

While subtracting 3-digit numbers, first subtract the ones, then the tens and finally the hundreds.

Hundreds	Tens	Ones
		
1	4	3

	H	T	O
Goats in the farm =	1	4	8
Goats sold = −			5
Goats left in the farm =	1	4	3

Step 1
Subtract the ones.
8 ones – 5 ones = 3 ones

Step 2
Subtract the tens.
4 tens – 0 tens = 4 tens

Step 3
Subtract the hundreds.
1 hundred – 0 hundreds = 1 hundred

So, 143 goats are left.

A story book has 287 pages. Hamza has read 63 pages. How many more pages does Hamza have to read?

	H	T	O
Pages in story book =	2	8	7
Pages Hamza has read = −		6	3
Pages left =	2	2	4

Step 1
Subtract the ones.
7 ones – 3 ones = 4 ones

Step 2
Subtract the tens.
8 tens – 6 tens = 2 tens

Step 3
Subtract the hundreds.
2 hundreds – 0 hundreds = 2 hundreds

So, Hamza has to read 224 pages.

There are 475 workers in a factory. If there are 235 male workers then how many female workers are there?

	H	T	O
Workers in the factory =	4	7	5
Number of men = −	2	3	5
Number of women =	2	4	0

Step 1
Subtract the ones.
5 ones – 5 ones = 0 ones

Step 2
Subtract the tens.
7 tens – 3 tens = 4 tens

Step 3
Subtract the hundreds.
4 hundreds – 2 hundreds = 2 hundreds

So, there are 240 female workers in the factory.

Key Fact

- When zero is subtracted from any number, the result is the number itself.
- When any number is subtracted from itself, the result is zero.

Exercise 2

1. Solve the following.

H	T	O
2	4	8
–		6

H	T	O
3	0	9
–		7

H	T	O
6	7	5
–		4

H	T	O
7	6	3
–	1	2

H	T	O
8	4	5
–	4	2

H	T	O
6	8	7
– 2	3	1

H	T	O
4	3	8
– 2	3	8

H	T	O
7	8	6
– 4	3	3

H	T	O
5	6	9
– 3	0	7

H	T	O
8	5	2
– 4	2	1

H	T	O
7	0	1
– 2	0	1

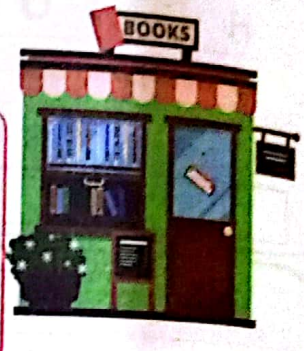
H	T	O
9	8	7
– 8	7	6

2. There are 685 students in a school. If there are 384 girls, how many boys are there?

		T	O
Students in the school	=		
Girls in the school	= –		
Boys in the school	=		

Subtraction of 3-digit Numbers with Borrowing

A shopkeeper bought 132 pens. He sold 9 pens in a day. How many pens were left with shopkeeper?



We can get the result by subtracting 9 from 132. We cannot subtract 9 from 2. Therefore, we borrow 1 ten as 10 ones from the tens place and carry to the ones place.

Hundreds	Tens	Ones
1	3	2

Hundreds	Tens	Ones
1	2	3

		H	T	O
Pens shopkeeper bought	=	1	~~3~~ 2	(10) 2
Pens sold	= −			9
Pens left	=	1	2	3

Step 1
Subtract the ones.
Borrow 1 ten as 10 ones from the tens place and carry to the ones place.
12 ones – 9 ones = 3 ones

Step 2
Subtract the tens.
2 tens – 0 tens = 2 tens

Step 3
Subtract the hundreds.
1 hundred – 0 hundreds = 1 hundred

So, 123 pens are left with the shopkeeper.

TEACHING POINT

Demonstrate to the children how to borrow 1 ten as 10 ones from the tens place using teaching aids (blocks, match stitches, etc).

In a festival, Maryam spent Rs 465. Her friend spent Rs 26 less than Maryam. How much amount did her friend spend?

We cannot subtract 6 from 5. Therefore, we borrow 1 ten as 10 ones from the tens place.

Hundreds	Tens	Ones
4	6	5

→

Hundreds	Tens	Ones
4	3	9

		H	T	O
Amount spent by Maryam	=	4	~~6~~ ^{5}	(10) 5
Less amount spent by her friend	= –		2	6
Amount spent by her friend	=	4	3	9

Step 1
Subtract the ones.
Borrow 1 ten as 10 ones from the tens place and carry to the ones place.
15 ones – 6 ones = 9 ones

Step 2
Subtract the tens.
5 tens – 2 tens = 3 tens

Step 3
Subtract the hundreds.
4 hundreds – 0 hundreds = 4 hundreds

So, Maryam's friend spent Rs 439.

There are 502 orange and apple trees in a garden. If there are 245 orange trees, how many apple trees are there?

Hundreds	Tens	Ones
5	0	2

Hundreds	Tens	Ones
2	5	7

We cannot subtract 5 from 2. Therefore, we borrow from the tens place but, zero is at the tens place. So, we borrow from the hundreds place.

	H	T	O
Total trees =	~~5~~ 4	(10) ~~1~~ 9	(10) 2
Orange trees = −	2	4	5
Apple trees =	2	5	7

Step 1

Subtract the ones.
Zero is at the tens place. So, we borrow 1 hundred as 10 tens from the hundreds place and carry to the tens place. Then, we borrow 1 ten as 10 ones from the tens place and carry to the ones place.
12 ones − 5 ones = 7 ones

Step 2

Subtract the tens.
9 tens − 4 tens = 5 tens

Step 3

Subtract the hundreds.
4 hundreds − 2 hundreds = 2 hundreds

So, there are 257 apple trees in the garden.

Exercise 3

1. Solve the following.

H	T	O
1	4	3
−		6

H	T	O
5	6	4
−		7

H	T	O
3	0	2
−		5

H	T	O
6	5	1
−		9

H	T	O
7	4	0
−		3

H	T	O
5	6	2
−	3	4

H	T	O
2	8	4
−	5	6

H	T	O
4	4	5
−	5	7

H	T	O
7	6	0
−	7	1

H	T	O
8	3	2
−	7	8

H	T	O
7	0	1
−	5	4

H	T	O
3	4	2
−1	5	8

H	T	O
4	5	2
−1	5	4

H	T	O
7	1	1
−2	6	7

H	T	O
8	0	3
−2	8	9

H	T	O
9	0	0
−6	1	2

2. There are 658 passengers in a train. 269 passengers get off the train at a station. How many passengers are left in the train?

		H	T	O
Total passengers	=			
Passengers get of	= −			
Passengers left	=			

Addition and Subtraction in Mixed Form

Read the stories carefully. Solve the question by identifying the operation of addition and subtraction.

Hint

Find the clue words to identify the operation and solve the questions.

1. There are 528 birds and 395 animals in a zoo. How many more birds are there than animals?

Number of birds	= ☐
Number of animals	= ☐ ☐
Number of more birds	= ☐

Tell total number of birds and animals altogether in the zoo.

Number of birds	= ☐
Number of animals	= ☐ ☐
Total number of birds and animals	= ☐

2. A bookseller has 385 books. He buys 145 books more.
Tell total number of books.

Number of books	= ☐
Bought books	= ☐ ☐
Total Books	= ☐

He sells 265 books. What is the total number of books left with him?

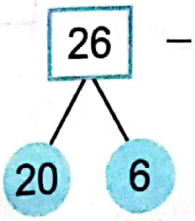
Total Books	= ☐
Sold books	= ☐ ☐
Books left	= ☐

TEACHING POINT

Help the students to find clue words for the identification of correct operations in word problems.

Subtraction of Numbers using Mental Strategy

Subtract 10 from 26 using mental strategy.

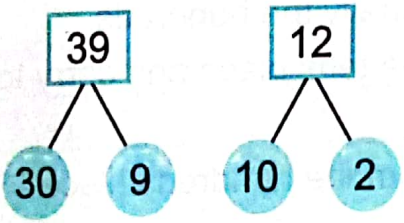


20 − 10 = 10

6 − 0 = 6

26 − 10 = 16

Subtract 12 from 39 using mental strategy.



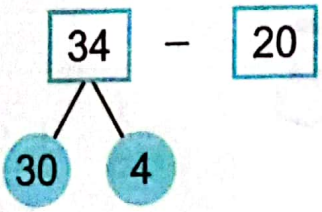
30 − 10 = 20

9 − 2 = 7

39 − 12 = 27

Subtract and complete the following using mental strategy.

a)

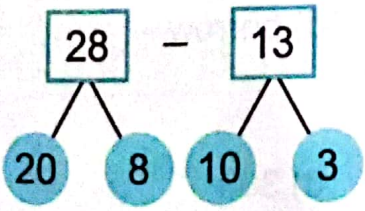


30 − ☐ = ☐

4 − ☐ = ☐

34 − 12 = ☐

b)



20 − ☐ = ☐

☐ − 3 = ☐

28 − 13 = ☐

c) 20 − 10 = ☐ d) 30 − 20 = ☐ e) 50 − 30 = ☐

f) 15 − 10 = ☐ g) 27 − 12 = ☐ h) 36 − 11 = ☐

i) 38 − 17 = ☐ j) 42 − 22 = ☐ k) 49 − 14 = ☐

I Have Learnt

- to subtract numbers up to 3-digits without borrowing.
- to subtract numbers up to 3-digits with borrowing.
- When subtracting 3-digit numbers, first subtract the ones, then tens and finally the hundreds.
- When borrow 1 ten as 10 ones from the tens place and carry to the ones place.
- When borrow 1 hundred as 10 tens from the hundreds place and carry to the tens place.
- to use subtraction of 3-digit numbers in real life situations.

Vocabulary

- Subtraction
- Subtraction without borrowing
- Subtraction with borrowing

Review Exercise

1. Choose the correct option.

i) In the subtraction of numbers, first subtract _____

a) ones b) tens c) hundreds d) borrow

ii) 500 – 300 = _____

a) 100 b) 200 c) 500 d) 300

iii) 100 – 10 = _____

یہ نوٹ کہ تعلیمی صورت حال پشتون کی جانب سے تعلیمی سال 2025 سے متعلق آگہی جاری ہے اور نا قابل فروخت ہے

a) 90 b) 99 c) 101 d) 110

iv) When any number is subtracted from itself, the result is _____ .

a) zero b) one c) number itself d) greater number

v) 18 – 0 = _____

a) 0 b) 8 c) 18 d) 108

2. Solve the following.

T	O
5	3
–	8

T	O
8	0
–	5

T	O
7	2
– 2	7

T	O
9	6
– 1	9

T	O
6	1
– 3	7

T	O
5	1
– 3	9

T	O
4	9
– 2	0

T	O
6	8
– 5	4

H	T	O
6	1	9
– 2	0	9

H	T	O
1	3	1
–		5

H	T	O
7	8	0
–	7	1

H	T	O
5	0	0
–	5	5

H	T	O
3	4	9
– 1	4	9

H	T	O
8	1	7
– 4	0	8

H	T	O
5	1	1
− 3	1	2

H	T	O
7	5	0
− 1	6	9

H	T	O
9	0	5
− 5	0	9

3. Umar has 42 toys. He distributes 18 toys in his friends. How many toys are left with Umar?

Toys Umar has	=	
Toys distributed in friends	= −	
Toys left	=	

4. A factory produced 624 bicycles in a month. 435 bicycles were sold. What is the total number of remaining bicycles?

Bicycles produced	=	
Bicycles sold	= −	
Remaining bicycles	=	

5. Sana got Rs 850 as Eidi. She gave Rs. 375 to her younger brother Ahmed. What amount is left with Sana?

Sana got Eidi	=	
Eidi given to Ahmed	= −	
Amount left with Sana	=	

6. A train has 965 seats. If there are 780 passengers in the train, how many seats are vacant?

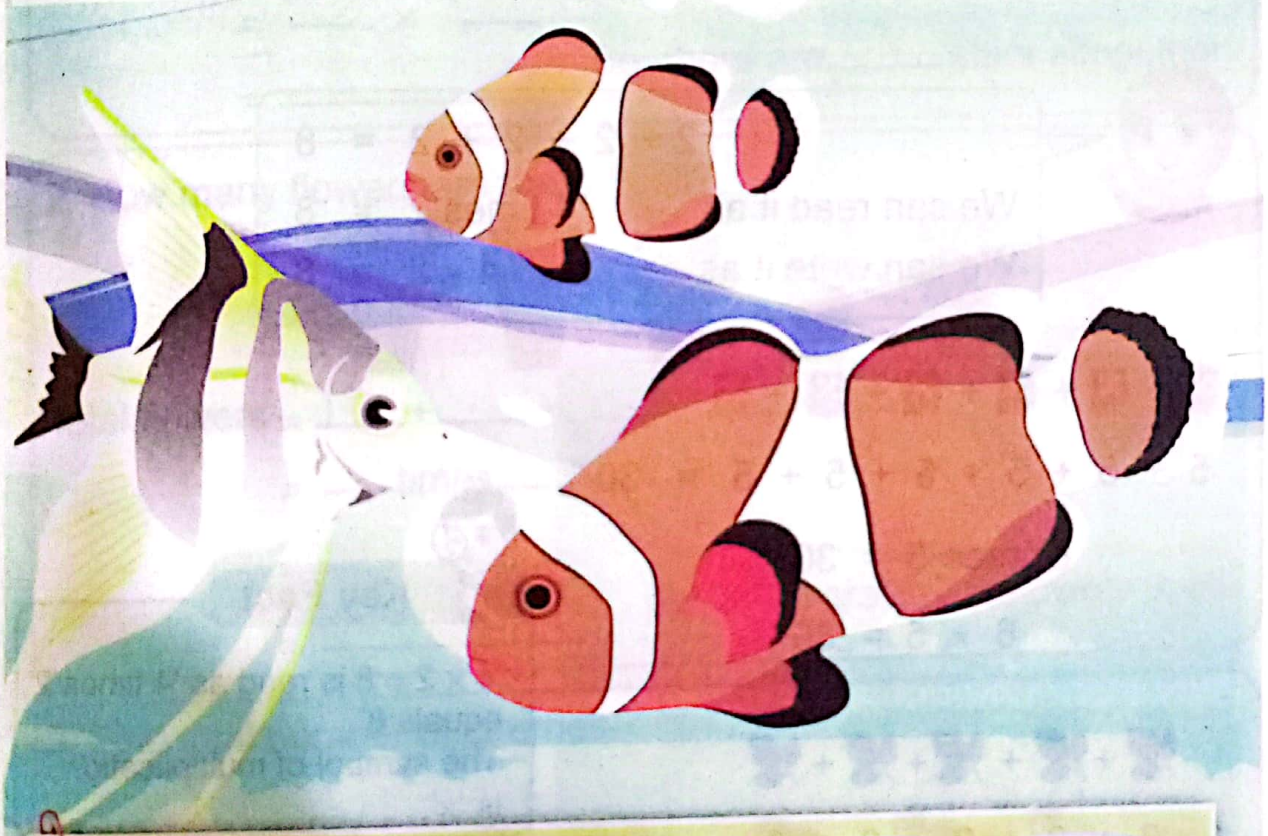
Total seats	=	
Total passengers	= −	
Vacant seats	=	

Multiplication

Learning Outcomes

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

- Recognize multiplication as repeated addition and use multiplication symbol "×".
- Complete number sequences in steps of 2, 3, 4, 5 and 10.
- Develop multiplication tables of 2, 3, 4, 5 and 10 till the multiplication of 10 x 10.
- Multiply numbers within multiplication tables.
- Write number sentence for multiplication from the picture.
- Solve number stories on multiplication up to 1-digit numbers.



There are 3 fish in each jar.
Total fish = 3 + 3 + 3 = 9

Think! Can you find the total number of fish without repeated addition?

Multiplication as Repeated Addition

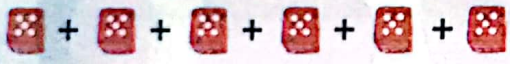
There are four friends.

Can you tell how many hands the four friends have altogether?

$2 + 2 + 2 + 2 = 8$

We can read it as 4 times 2 = 8

We can write it as $4 \times 2 = 8$



$5 + 5 + 5 + 5 + 5 + 5 = 30$

6 times 5 = 30

$6 \times 5 = 30$

$3 + 3 + 3 + 3 + 3 = 15$

5 times 3 = 15

$5 \times 3 = 15$

Key Fact

- '$4 \times 2 = 8$ is read as '4 times 2' equals 8'.
- The symbol of multiplication is '×'.

- For effective learning and teaching, use 'Urdu or local language' as medium of instruction to explain the concept of multiplication.
- Explain the concept of 'multiplication as repeated addition' using teaching aids.

Exercise 1

1. How many stars are there altogether?

Total stars = 3 + 3 + 3 + 3

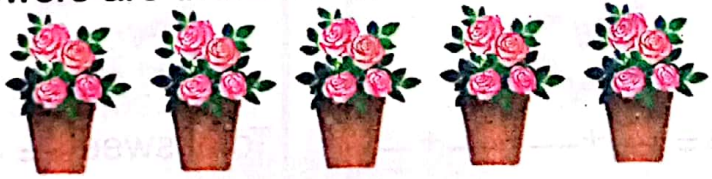
= ____times____

= ____ × ____

= _____

So, there are_____ stars altogether.

2. How many flowers are there in all?



Total flowers = ____ + ____ + ____ + ____ + ____

= ____times____

= ____ × ____

= _____

So, there are_____ flowers in all.

3. Find total number of cherries.

Total cherries = ____ + ____ + ____ + ____ + ____ + ____ + ____

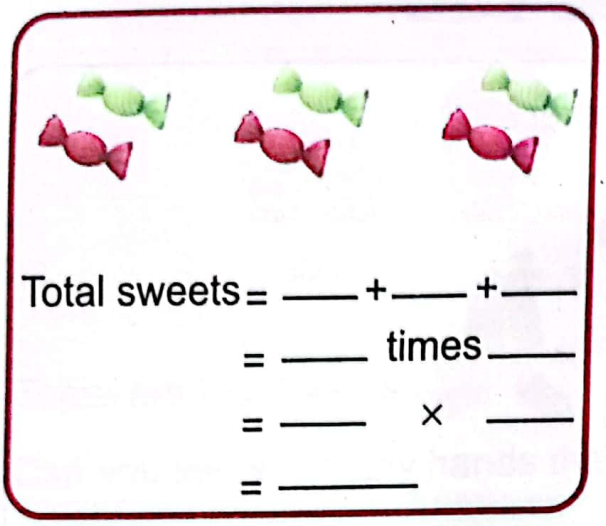
= ____times____

= ____ × ____

= _____

So, total number of cherries is____.

4. Count the sweets.

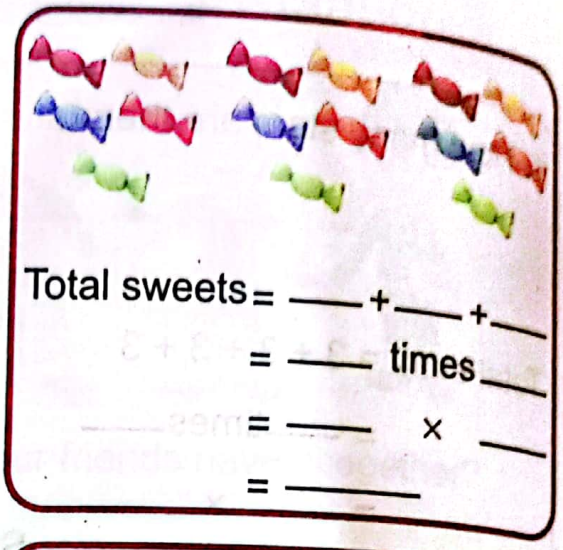


Total sweets = ___ + ___ + ___

= ___ times ___

= ___ × ___

= ___

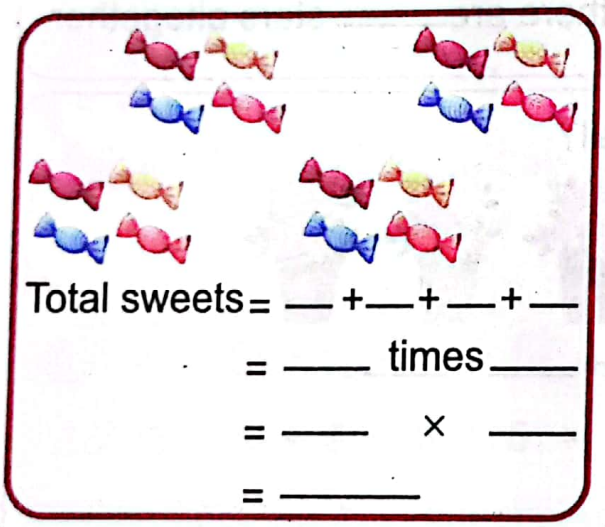


Total sweets = ___ + ___ + ___

= ___ times ___

= ___ × ___

= ___

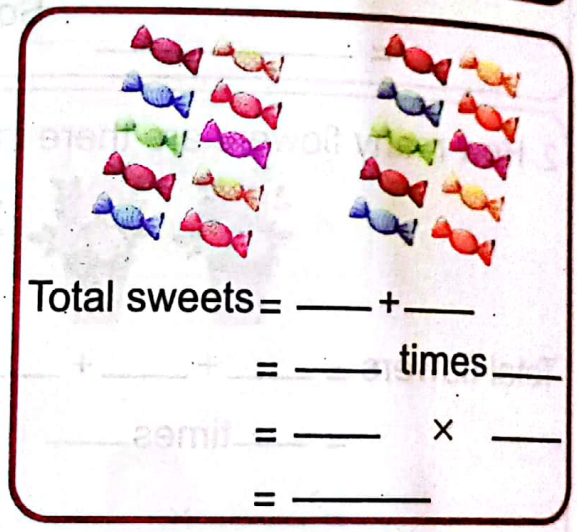


Total sweets = ___ + ___ + ___ + ___

= ___ times ___

= ___ × ___

= ___



Total sweets = ___ + ___

= ___ times ___

= ___ × ___

= ___

5. Fill in the blanks.

2 + 2 + 2 + 2 + 2	= 5 × 2	= 10
4 + 4 + □ + □ + 4 + 4	= 6 × □	=
5 + 5 + 5 + 5 + 5	= □ × 5	=
□ + □ + □	= 3 × 10	=

Counting in Steps

Counting in Steps of 2

Let us count the cherries by counting in steps of 2.

So, there are 20 cherries.

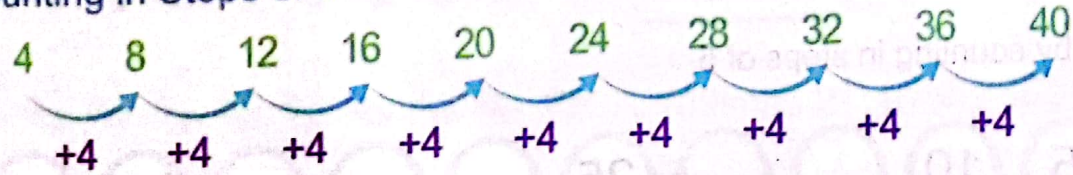
We can write it as

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

Counting in Steps of 3

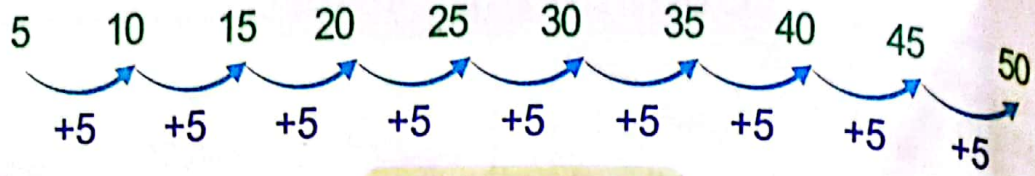
10 times 3 = 30
$10 \times 3 = 30$

Counting in Steps of 4



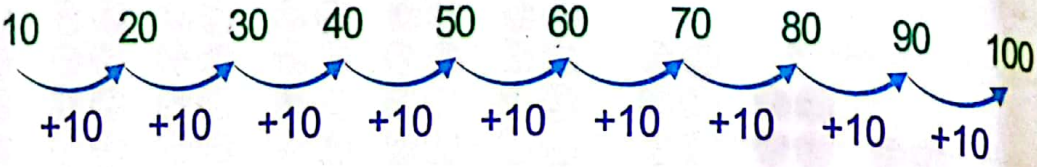
10 times 4 = 40
$10 \times 4 = 40$

Counting in Steps of 5



10 times 5 = 50
10 × 5 = 50

Counting in Steps of 10



10 times 10 = 100
10 × 10 = 100

Try Yourself

Complete the following:

1. by counting in steps of 2

2 4 6 ○ ○ ○ ○ 16 ○ 20

2. by counting in steps of 4

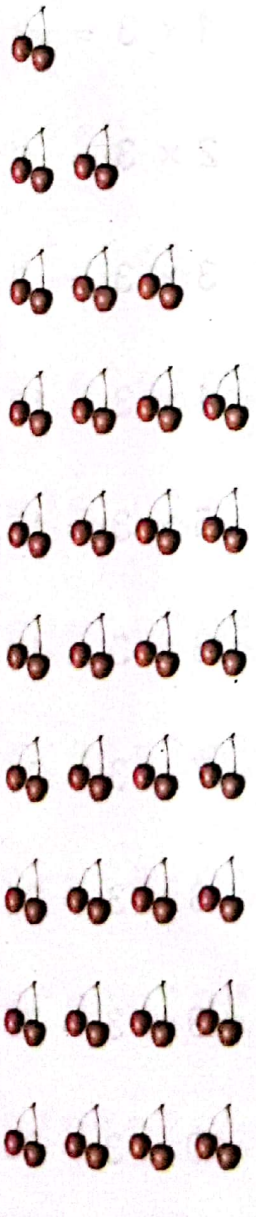
4 8 ○ 16 ○ ○ 28 ○ ○ 40

3. by counting in steps of 5

5 10 ○ ○ 25 ○ ○ ○ 45 ○

Table of 2

We can develop 'the table of 2' by counting in steps of 2



1 time 2	1 × 2 = 2
2 times 2	2 × 2 = 4
3 times 2	3 × 2 = 6
4 times 2	4 × 2 = 8
5 times 2	5 × 2 = 10
6 times 2	6 × 2 = 12
7 times 2	7 × 2 = 14
8 times 2	8 × 2 = 16
9 times 2	9 × 2 = 18
10 times 2	10 × 2 = 20

Make the groups of students and help them to learn the '2 times table' using teaching aids (chart, etc).

Table of 3

We can develop 'the table of 3' by counting in steps of 3.

🍃	1 time 3	1 × 3 = 3
🍃🍃	2 times 3	2 × 3 = 6
🍃🍃🍃	3 times 3	3 × 3 = 9
🍃🍃🍃🍃	4 times 3	4 × 3 = 12
🍃🍃🍃🍃🍃	5 times 3	5 × 3 = 15
🍃🍃🍃🍃🍃🍃	6 times 3	6 × 3 = 18
🍃🍃🍃🍃🍃🍃🍃	7 times 3	7 × 3 = 21
🍃🍃🍃🍃🍃🍃🍃🍃	8 times 3	8 × 3 = 24
🍃🍃🍃🍃🍃🍃🍃🍃🍃	9 times 3	9 × 3 = 27
🍃🍃🍃🍃🍃🍃🍃🍃🍃🍃	10 times 3	10 × 3 = 30

Make the groups of students and help them to learn the '3 times table' using teaching aids (chart, etc).

Table of 4

We can develop 'the table of 4' by counting in steps of 4.

1 time 4	1 × 4 = 4
2 times 4	2 × 4 = 8
3 times 4	3 × 4 = 12
4 times 4	4 × 4 = 16
5 times 4	5 × 4 = 20
6 times 4	6 × 4 = 24
7 times 4	7 × 4 = 28
8 times 4	8 × 4 = 32
9 times 4	9 × 4 = 36
10 times 4	10 × 4 = 40

Make the groups of students and help them to learn the '4 times table' using teaching aids (chart, etc).

Table of 5

We can develop 'the table of 5' by counting in steps of 5.

1 time 5 — $1 \times 5 = 5$

2 times 5 — $2 \times 5 = 10$

3 times 5 — $3 \times 5 = 15$

4 times 5 — $4 \times 5 = 20$

5 times 5 — $5 \times 5 = 25$

6 times 5 — $6 \times 5 = 30$

7 times 5 — $7 \times 5 = 35$

8 times 5 — $8 \times 5 = 40$

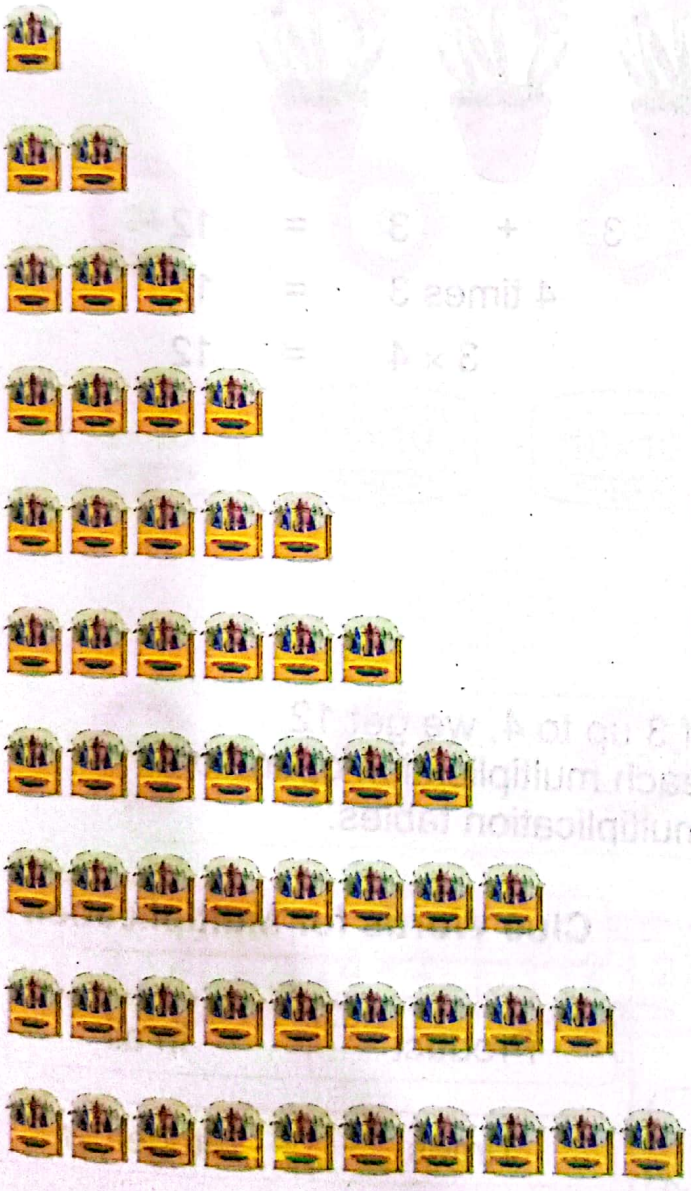
9 times 5 — $9 \times 5 = 45$

10 times 5 — $10 \times 5 = 50$

Make the groups of students and help them to learn the '5 times table' using teaching aids (chart, etc).

Table of 10

We can develop 'the table of 10' by counting in steps of 10.



1 time 10	$1 \times 10 = 10$
2 times 10	$2 \times 10 = 20$
3 times 10	$3 \times 10 = 30$
4 times 10	$4 \times 10 = 40$
5 times 10	$5 \times 10 = 50$
6 times 10	$6 \times 10 = 60$
7 times 10	$7 \times 10 = 70$
8 times 10	$8 \times 10 = 80$
9 times 10	$9 \times 10 = 90$
10 times 10	$10 \times 10 = 100$

Make the groups of students and help them to learn the '10 times table' using teaching aids (chart, etc).

Multiplication of 1-digit Numbers

There are 4 flowerpots in my lawn. Each flowerpot has 3 flowers. How many flowers are there altogether?

3 + 3 + 3 + 3 = 12

4 times 3 = 12

3 × 4 = 12

$4 \times 3 = 12$ can be written as

$$\begin{array}{r} 4 \\ \times\ 3 \\ \hline 12 \end{array}$$

Read the table of 3 up to 4, we get 12. Now, we will do each multiplication operation with the help of multiplication tables.

So, there are 12 flowers altogether.

Try Yourself

If there are 6 flowerpots, how many flowers are there altogether?

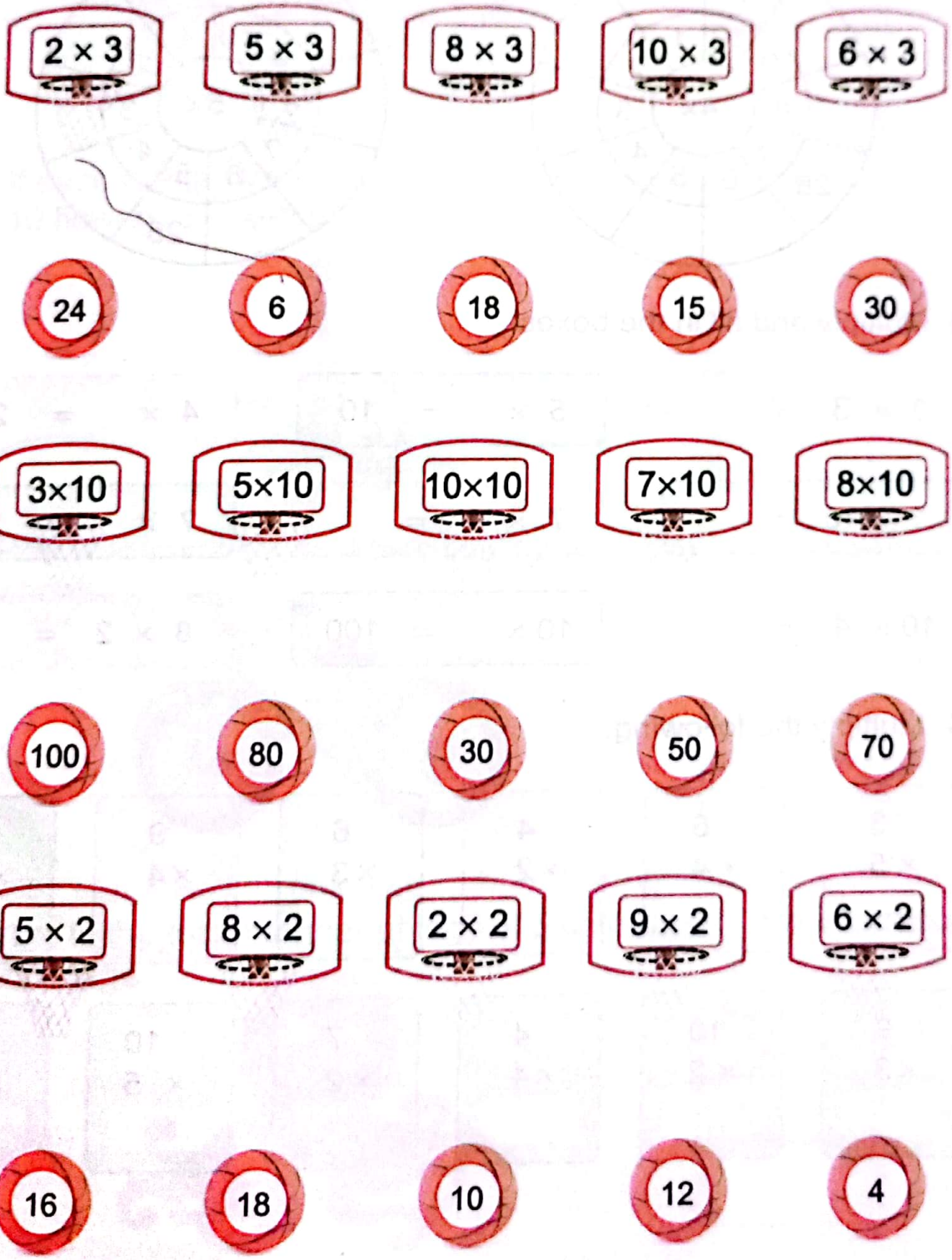
Clue Words for Multiplication

Product	In all
Times	Altogether

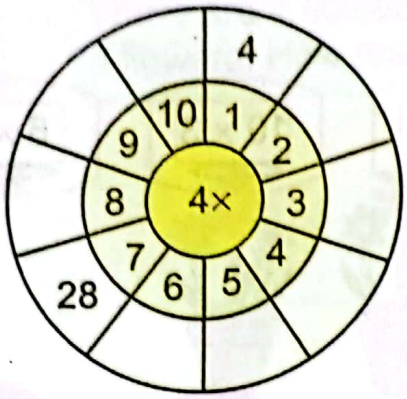
Explain to the students to solve real life problems related to multiplication using clue words.

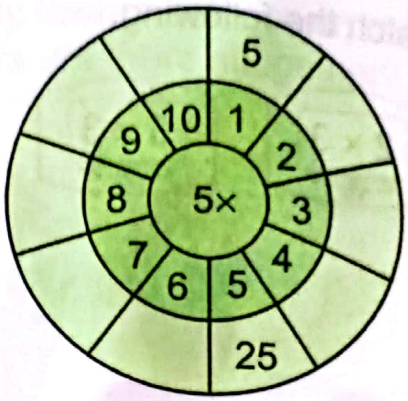
Exercise 2

1. Match the following.



2. Complete the multiplication tables.





3. Multiply and fill in the boxes.

3 × 3 =	5 × ☐ = 10	4 × ☐ = 20
1 × 10 =	7 × 4 =	7 × ☐ = 21
10 × 4 =	10 × ☐ = 100	8 × 2 =

4. Multiply the following.

3 × 5	6 × 4	4 × 2	6 × 3	9 × 4	8 × 5
9 × 3	10 × 2	4 × 4	7 × 2	10 × 5	10 × 10

5. There are 6 cats. Each cat has 4 kittens. How many kittens are there in all?

×

6. If each flower has 9 petals, how many petals are there in 10 flowers altogether?

×

7. How many wheels do 4 bicycles have? If one bicycle has two wheels.

×

8. What is the total number of legs of 5 octopuses? If one octopus has 8 legs.

×

I Have Learnt

- to recognize multiplication as repeated addition.
- to use symbol 'x' for multiplication.
- to count in steps of 2, 3, 4, 5 and 10.
- to read and write the multiplication tables of 2, 3, 4, 5 and 10.
- to multiply numbers using multiplication tables.
- to use multiplication in real life.

Vocabulary

- Repeated addition
- Multiplication
- Counting in steps

Review Exercise

1. Choose the correct option.

i). 2 + 2 + 2 + 2 = _____

(a) 2 times 2 (b) 2 times 4 (c) 4 times 2 (d) 4 times 4

ii). 3, 6, 9, 12, _____

(a) 13 (b) 14 (c) 15 (d) 16

iii). 10 × 5 = _____

(a) 10 (b) 15 (c) 25 (d) 50

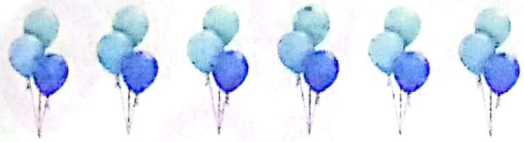
iv). 7 times 3 = _____

(a) 12 (b) 15 (c) 18 (d) 21

v). 4, 8, 12, 16, _____, 24

(a) 17 (b) 18 (c) 19 (d) 20

2. Count the balloons.



Total balloons = ___+___+___+___+___+___

= ___ times ___

= ___ × ___

= _____

Total balloons = ___+___+___+___

= ___ times ___

= ___ × ___

= _____

Total balloons = ___+___+___

= ___ times ___

= ___ × ___

= _____

Total balloons = ___+___+___+___+___+___

= ___ times ___

= ___ × ___

= _____

3. Complete the following.

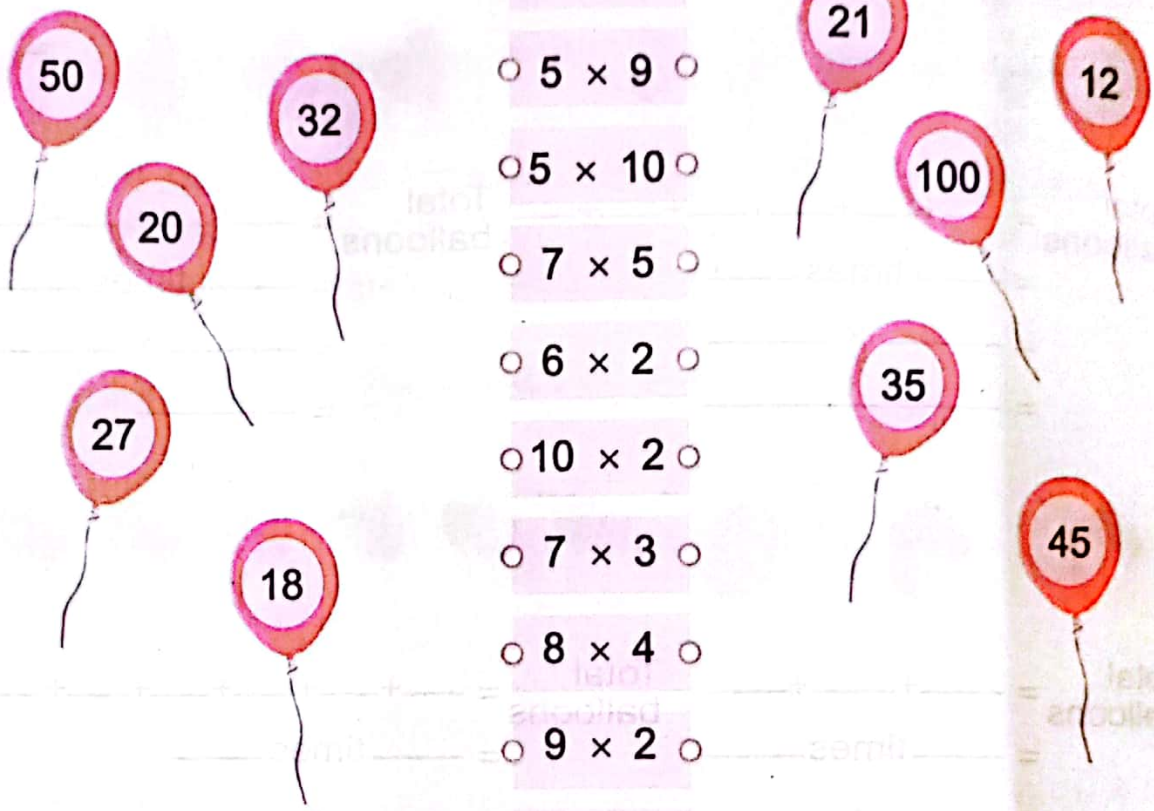
(i). by counting in steps of 3

3, 6, ◯, 12, ◯, ◯, 21, ◯, ◯, 30

(ii). by counting in steps of 10

10, 20, ◯, ◯, 50, ◯, ◯, ◯, ◯, 100

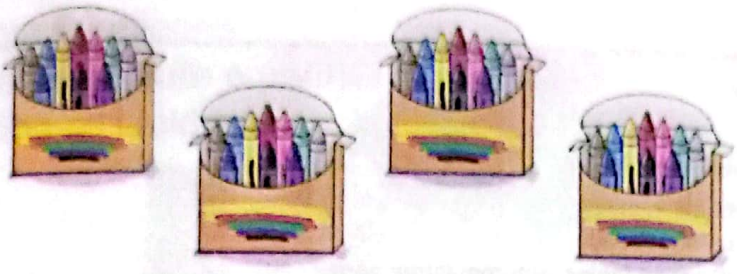
4. Match with the correct answer.



5. Multiply the following.

7 × 2 =	4 × 3 =	5 × 5 =	6 × 4 =	8 × 10 =	9 × 4 =
1 × 2 =	8 × 3 =	6 × 3 =	1 × 10 =	8 × 5 =	9 × 10 =

6. There are 10 pencils in a packet. How many pencils are there in 4 packets in all?



×

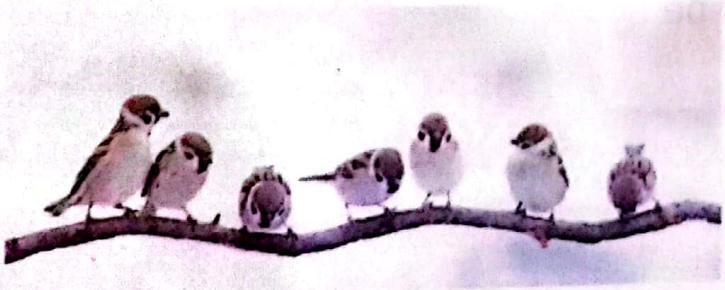
7. If each vase has 8 flowers, how many flowers do 3 vases have altogether?

×

8. There are 5 oranges in a basket. How many oranges are there in 7 baskets in all?

×

9. There are 7 birds sitting on the branch of a tree. Find how many legs these birds have altogether.



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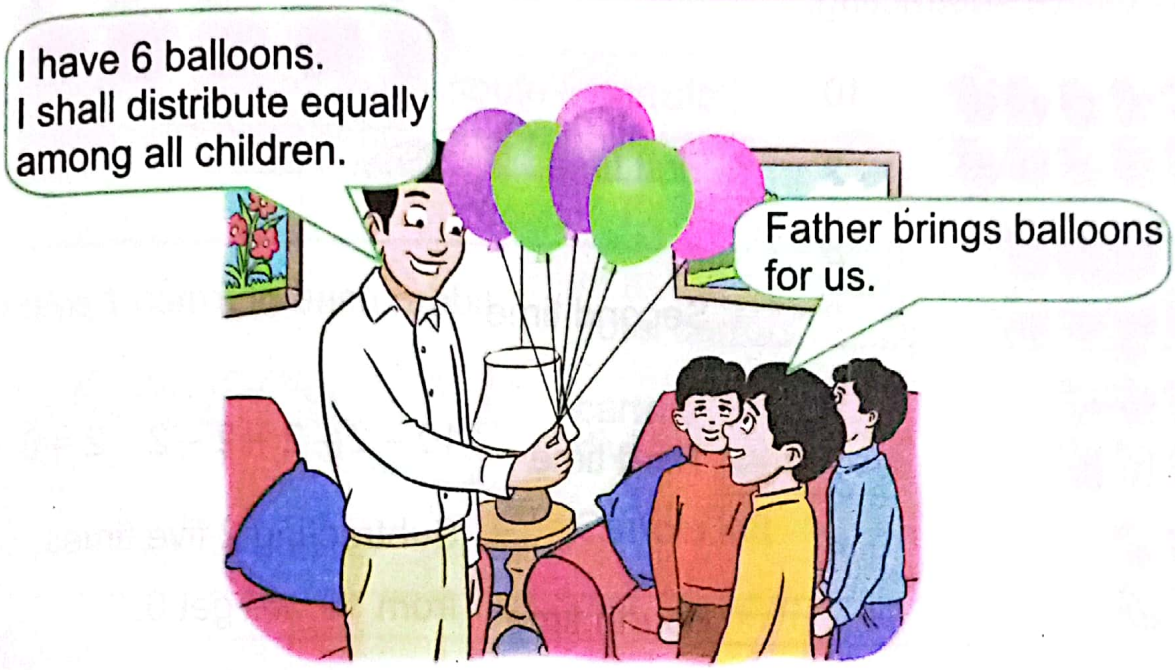
Division

Learning Outcomes

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

- Recognize and use division symbols ÷.
- Recognize division as successive subtraction.
- Divide numbers within the multiplication tables with remainder zero.
- Solve number stories involving division up to 1 - digit numbers.
- Solve real life situations (using Pakistani currency as well) involving addition, subtraction, multiplication, and division. Give reasons for choosing the correct operation.

Division as Successive Subtraction



The father gives 1 balloon to each child.

$6 - 3 = 3$

3 balloons are left with the father.

Again, the father gives more 1 balloon to each child.

Now, each child has 2 balloons.

$3 - 3 = 0$

0 balloons are left with father.

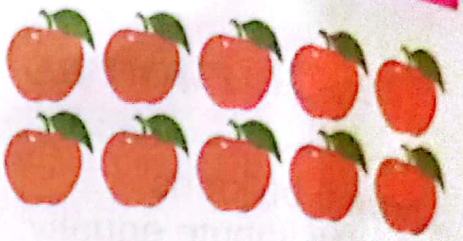
So, each child gets 2 balloons.

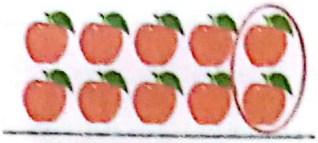
Subtracting 3 two times from 6, we get 0.

$6 - 3 - 3 = 0$

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

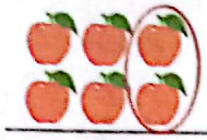
Divide 10 apples in 2 children using successive subtracting.



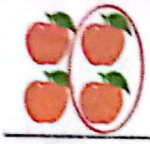


10
− 2 ⟶ First time

8
− 2 ⟶ Second time



6
− 2 ⟶ Third time



4
− 2 ⟶ Fourth time

2
− 2 ⟶ Fifth time
0

$10 - 2 - 2 - 2 - 2 - 2 = 0$

Subtracting 2 five times from 10, we get 0.

So, each child gets 5 apples.

Try Yourself

Divide 20 eggs in 4 children using successive subtraction.

20
− 4
—
—
—
—
—
0

Subtracting___times 4 from 20, we get 0. So, each child gets____eggs.

Divide 12 balloons in 3 children using successive subtraction.

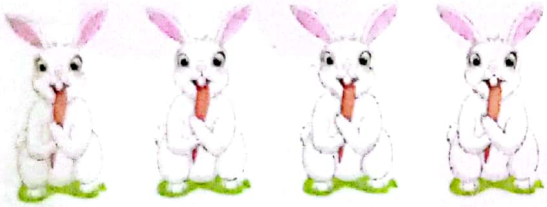
12
− 3
—
—
—
—
0

Subtracting___times 3 from 12, we get 0. So, each child gets____balloons.

Division

I want to distribute 8 carrots equally among 4 rabbits.

I give 1 carrot to each rabbit.

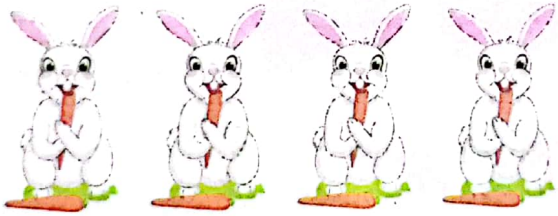


Total carrots = 8

carrots divided = − 4

Carrots left = 4

I give 1 carrot to each rabbit.



Remaining carrots = 4

Carrots divided = − 4

Carrots left = 0

$8 - 4 - 4 = 0$

Subtracting 2 times 4 from 8, we get 0.

We can write as,

$8 \div 4 = 2$

So, each rabbit gets 2 carrots.

Recall the table of 4' up to 2.

$2 \times 4 = 8$

Key Fact

- Division is a successive subtraction.
- The symbol of division is '÷'

TEACHING POINT

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

Exercise 1

1. Put 15 flowers equally in 3 vases.

Total flowers = 15

Total vases = 3

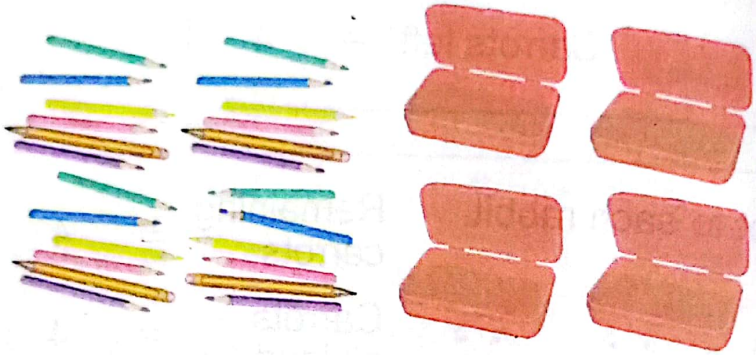
Flowers in each vase = 15 ÷ 3

= ☐

Hint

Recall the table of 3.

2. Put 24 pencils equally in 4 boxes.



Hint

Recall the table of 4.

Total pencils = ☐

Total boxes = ☐

Pencils in each box = ☐ ÷ ☐

= ☐

3. Divide 20 ice-creams equally in 10 children.

Total ice-creams = ☐

Total children = ☐

Ice-creams each child gets = ☐ ÷ ☐

= ☐

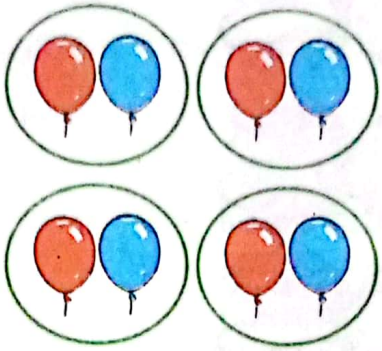
Hint

Recall the table of 10.

4. Solve and fill in the blanks.

8 ÷ 4 = 2

So, each group has 2 balloons.



Hint

Recall the multiplication tables.

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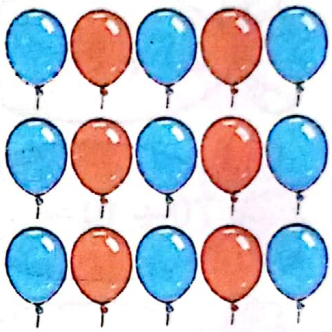
15 ÷ 5 = ☐

So, each group has ☐ balloons.



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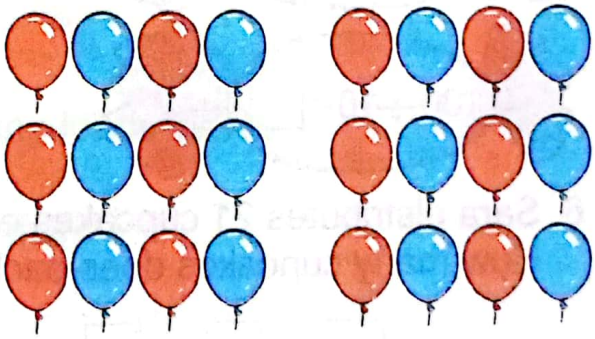
24 ÷ 4 = ☐

So, each group has ☐ balloons.



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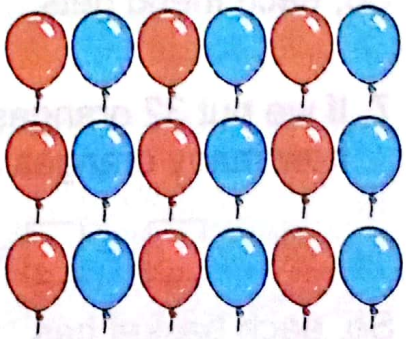
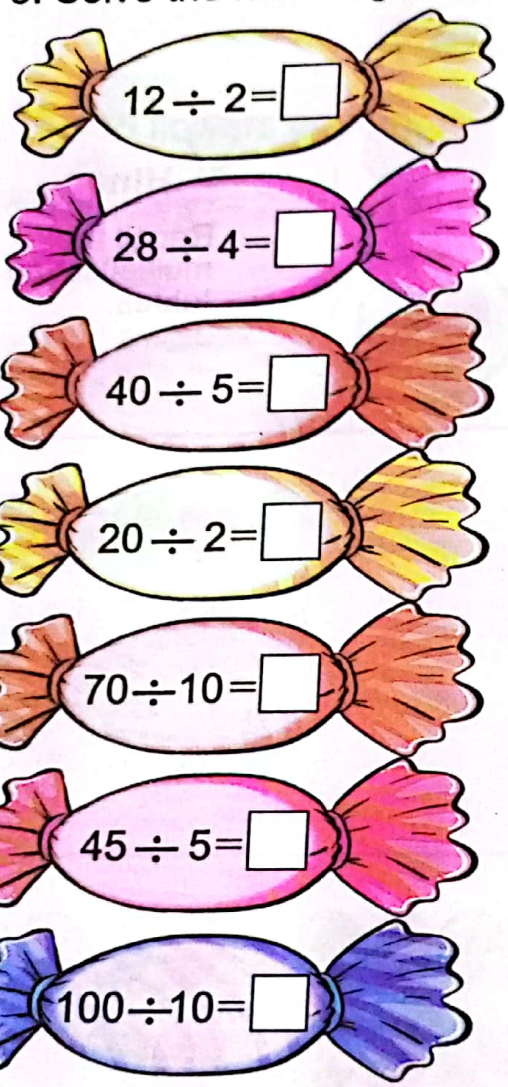
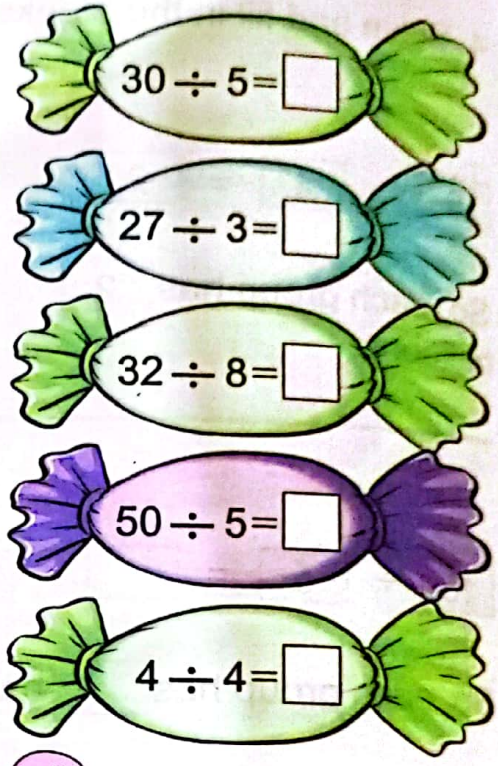
18 ÷ 3 = ☐

So, each group has ☐ balloons.



5. Solve the following.





Key Fact

When any number (except zero) is divided by number itself, the result is 1.

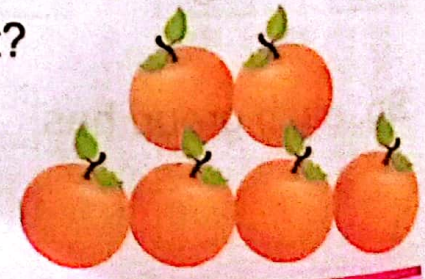
6. Sara distributes 21 cupcakes equally in 7 friends. How many cupcakes does each friend get?

□ ÷ □ = □

So, each friend gets ..... cupcakes.

7. If we put 32 oranges equally in 4 baskets, how many oranges are there in each basket?

□ ÷ □ = □



So, each basket has ..... oranges.

Mixed Number Stories

Clue Words for Addition

- Total
- Altogether
- In all
- Sum
- Added to

Clue Words for Subtraction

- Left
- More than
- How many less/fewer
- Remain
- Difference

Clue Words for Multiplication

- Product
- Times
- In all
- Altogether

Clue Words for Division

- How many will each get
- How many in each group
- Shared
- Divided
- Equal/equally

Solve the mixed number stories using following steps.

Step 1 Read the problem carefully.

Step 2 Underline the clue words to identify the correct operation.

Step 3 Draw a picture, if needed.

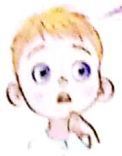
Step 4 Write a number sentence.

Step 5 Solve the words problem.

Read the following word problems carefully. Solve the problem with the identification of correct operation. Write reason to choose the operation.

1. A tailor stitched 65 suits in the first month and 58 suits in the second month. How many suits did he stitch altogether?

Stitched suits in the first month	=	_____
Stitched suits in the second month	= +	_____
_____	=	_____



Tell the Reason

Clue word is altogether.
So, we add.

2. Ahmed has Rs. 500. He buys grocery for Rs. 225. How much amount is left with Ahmed?

Total amount	=	_____
Cost of grocery	= □	_____
_____	=	_____

Tell the Reason

Clue word is _____.
So, we _____.

3. Ahmed has 5 books in a bag. How many books will be there in 6 such bags?

Books in bag	=	_____
Number of bags	= □	_____
_____	=	_____

Tell the Reason

Clue word is _____.
So, we _____.

4. Divide 27 bananas in 3 monkeys equally.

Total of bananas	=	_____
Total of monkeys	= □	_____
_____	=	_____

Tell the Reason

Clue word is _____.
So, we _____.

Help to the students to identify the correct operation using clue words. Explain to the students how to solve the words problem.

I Have Learnt

- to recognize division as successive subtraction.
- to use symbol '÷' for division.
- to divide using the multiplication tables.
- when any number (except zero) is divide by number itself, the result is 1.
- when any number is divided by 1, the result is number itself.
- to use division in real life situations.

Vocabulary

- Divide
- Successive subtraction

Review Exercise

1. Choose the correct option.

i. Division is a _____.

(a) equally add (b) repeated multiplication

(c) successive subtraction (d) repeated addition

ii. The symbol '÷' is used for _____.

(a) addition (b) multiplication (c) subtraction (d) division

iii. 100 ÷ 10 = _____

(a) 101 (b) 100 (c) 110 (d) 10

iv. When any number is divided by 1, the result is _____

(a) zero (b) one (c) bigger number (d) number itself

v. 5 ÷ 5 = _____

(a) 0 (b) 1 (c) 5 (d) 10

2. Complete the following.

$$\begin{array}{r} 12 \\ -\ 4 \\ \hline \text{-----} \\ -\ 4 \\ \hline \text{-----} \\ -\ \text{-----} \\ \hline 0 \end{array}$$

□ ÷ □ = □

$$\begin{array}{r} 20 \\ -\ 5 \\ \hline \text{-----} \\ -\ 5 \\ \hline \text{-----} \\ -\ \text{-----} \\ \hline \text{-----} \\ -\ 5 \\ \hline 0 \end{array}$$

□ ÷ □ = □

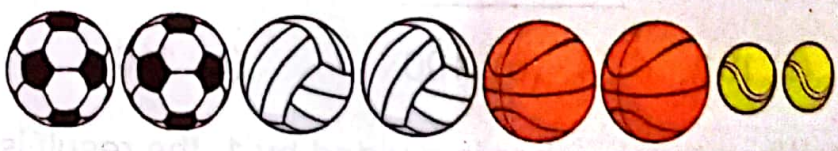
3. Divide 10 pigeons in 5 groups equally.

□ ÷ □ = □ 

4. Divide 6 toys in 3 children equally.

□ ÷ □ = □ 

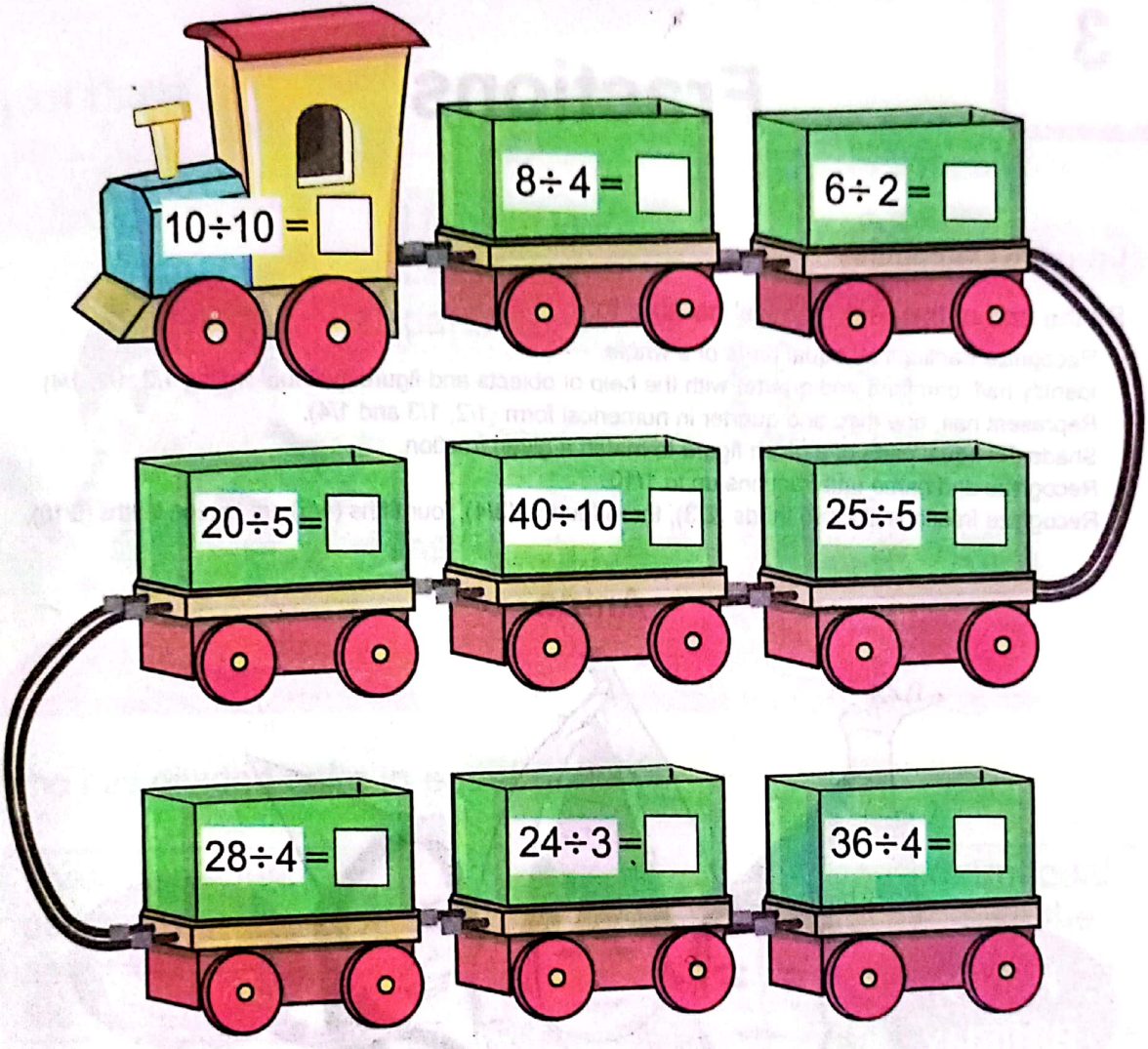
5. Divide 8 balls in 2 teams equally.

□ ÷ □ = □ 

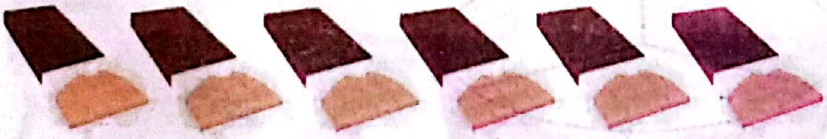
6. Divide 12 rings in 4 girls equally.

□ ÷ □ = □ 

4. Solve the following.



5. Ali distributes 30 chocolate equally among 5 friends. How many chocolates does each friend get?



□ ÷ □ = □

So, each friend gets _____ chocolates.

6. Ramsha distributes 20 suits equally among 10 children. How many suits does each child get?

□ ÷ □ = □

So, each child gets _____ suits.

Unit 3

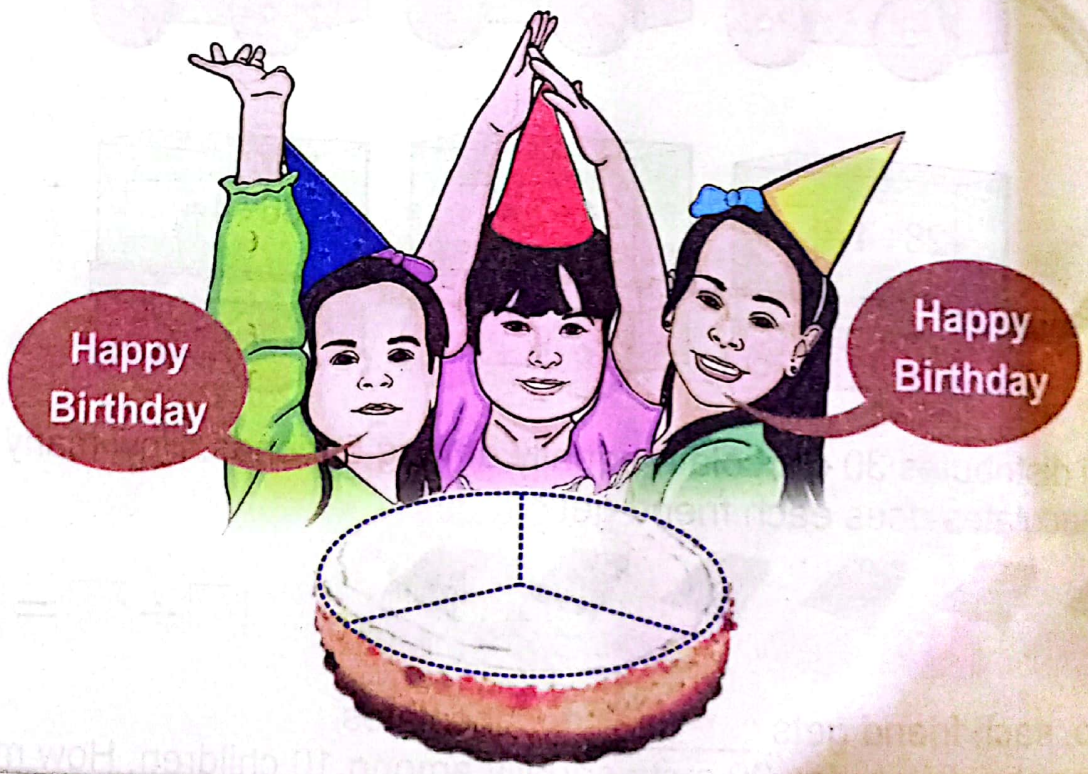
Fractions

Learning Outcomes

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

- Recognize fractions as equal parts of a whole.
- Identify half, one third and quarter with the help of objects and figures(without writing 1/2, 1/3, 1/4).
- Represent half, one third and quarter in numerical form (1/2, 1/3 and 1/4).
- Shade the equal parts of a given figure to match a given fraction.
- Recognize and name unit fractions up to 1/10.
- Recognize fractions like two thirds (2/3), three fourths (3/4), four fifths (4/5), up to nine tenths (9/10).

Amna

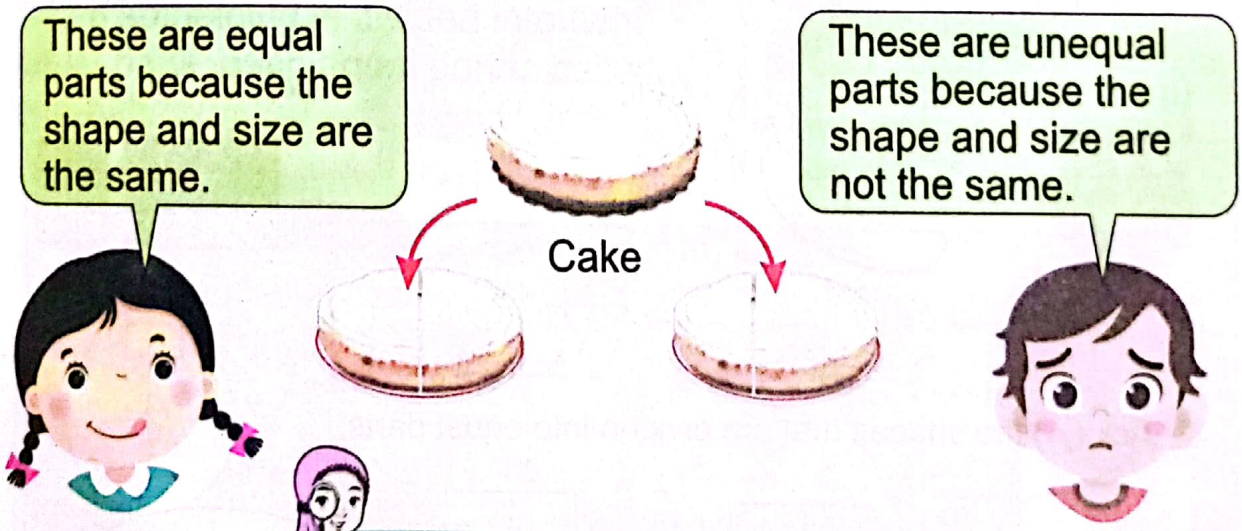


Amna divides her birthday cake into three equal parts and gives to her friends.

Fractions

Equal Parts

Who has divided cake in equal parts?



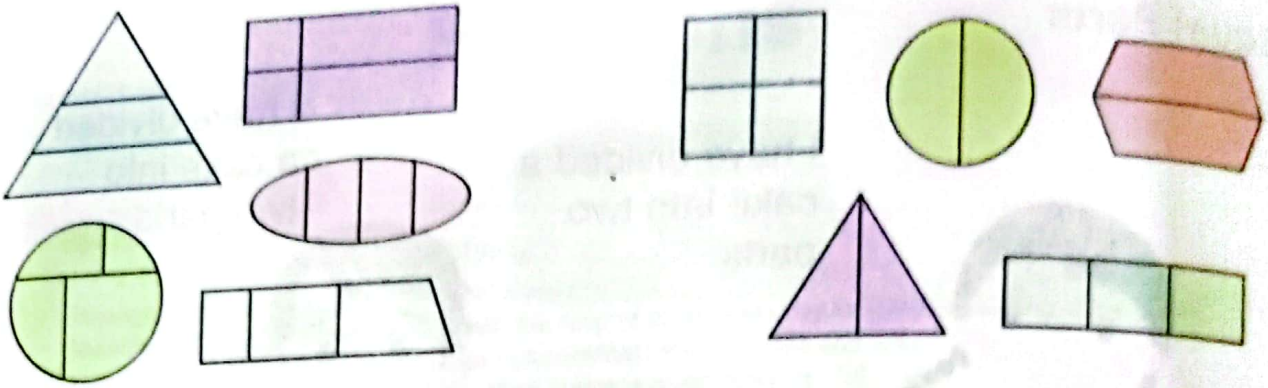
Key Fact

Equal parts have the same shape and the size.

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

Demonstrate the concept of fractions using teaching aids (pieces of paper, chart, equal wooden parts, etc).

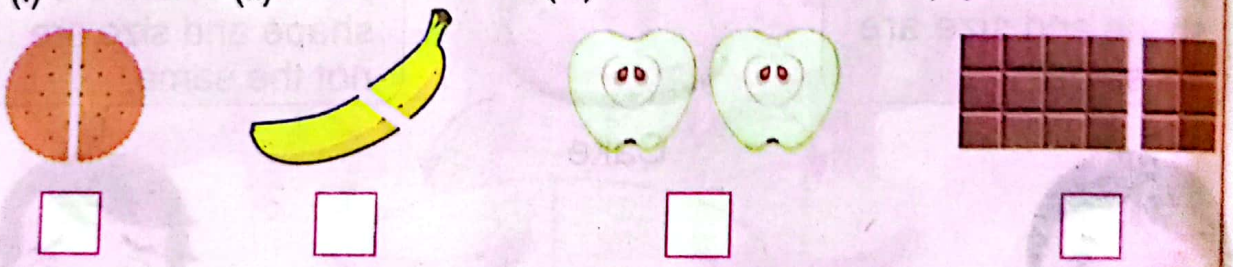
Observe the following shapes.



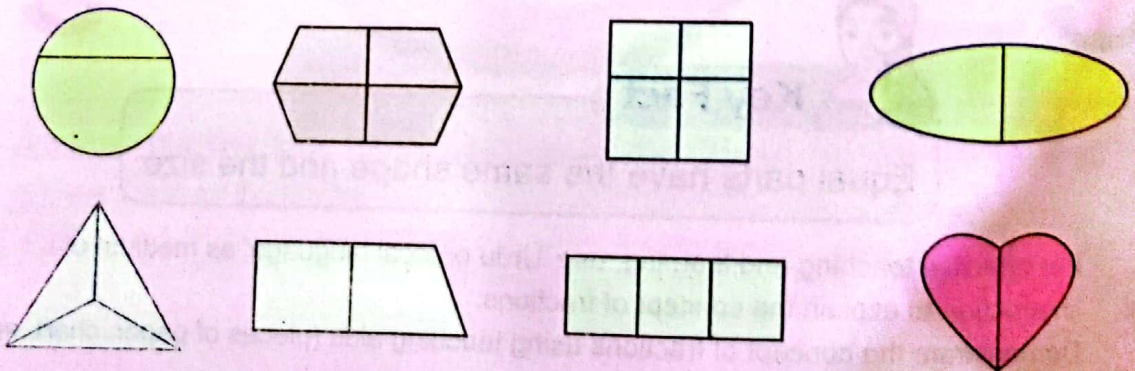
Try Yourself

1. Tick (✓) the following objects that are divided into equal parts.

(i) (ii) (iii) (vi)



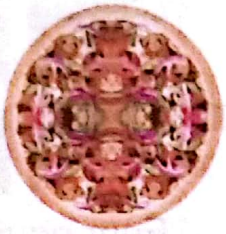
2. Tick (✓) the shapes that are divided into equal parts.



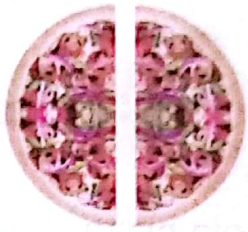
Half

Let us divide this pizza.

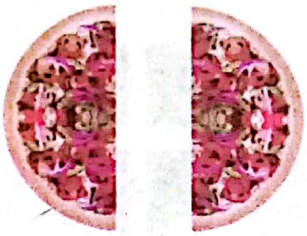
I have divided the pizza into two equal parts.



Whole pizza



Two equal parts



One-half

One-half

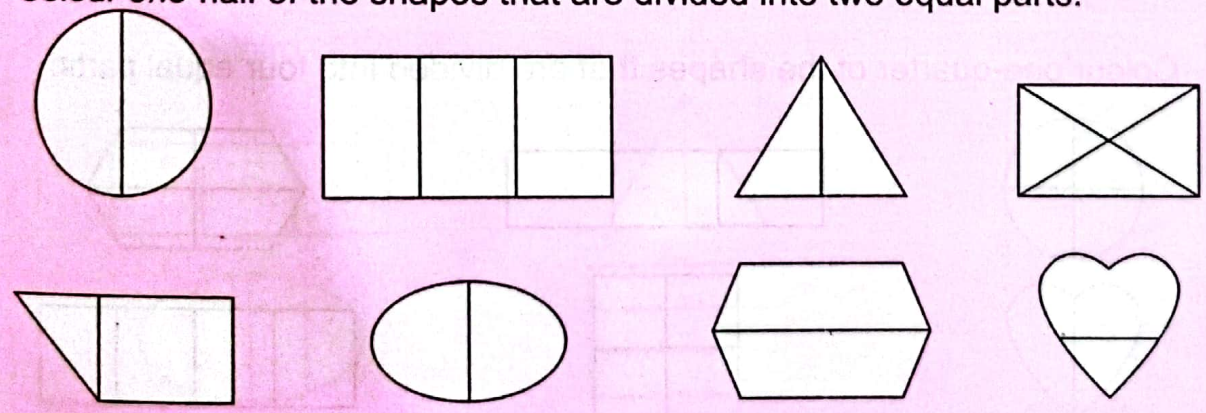
When something is divided into two equal parts, each equal part is called one-half.

Key Fact

Two halves together make a whole.

Try Yourself

Colour one-half of the shapes that are divided into two equal parts.



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

Quarter

I have already divided a pizza into two equal parts. Now, it is further divided into more equal parts.

Whole pizza → Two equal parts → Four equal parts

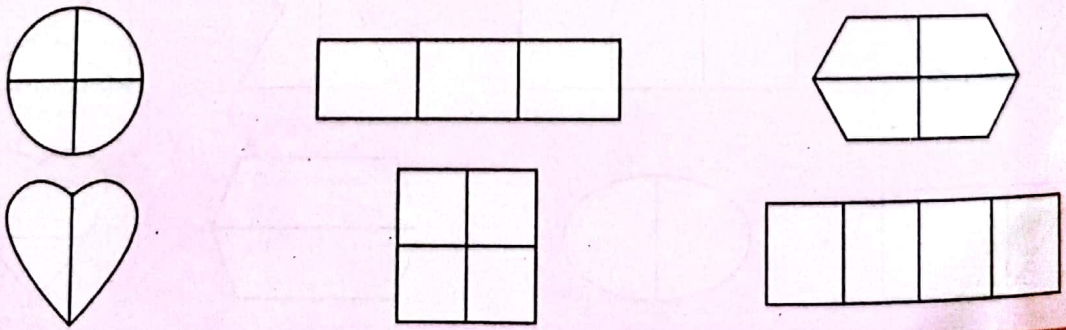
When something is divided into four equal parts, each equal part is called one-quarter.

Key Fact

Four quarters together make a whole.

Try Yourself

Colour one-quarter of the shapes that are divided into four equal parts.



TEACHING POINT

Explain the concept of one-quarter using teaching aids.

One-third

My father brought a cake. I divided the cake into three equal parts. Then, we ate the cake. The cake was delicious.

Whole cake

Three equal parts

One-third

One-third

One-third

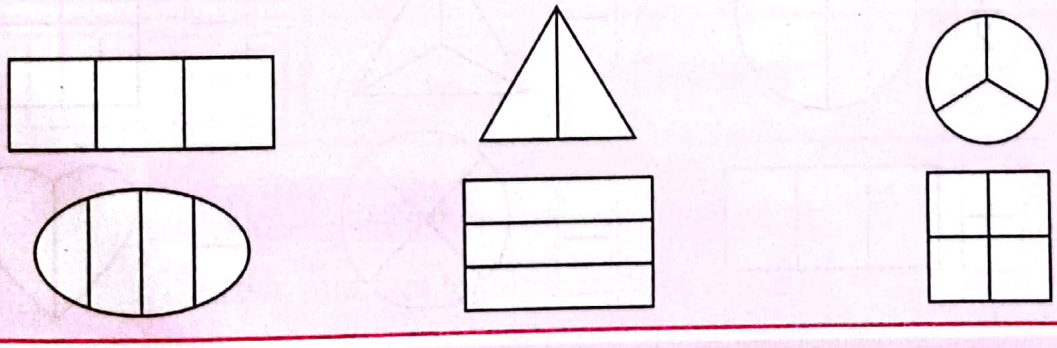
When something is divided into three equal parts, each equal part is called one-third.

Key Fact

Three thirds together make a whole.

Try Yourself

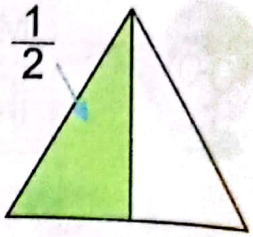
Colour one-third of the shapes that are divided into three equal parts.

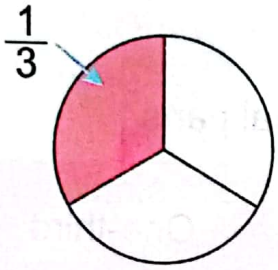


Explain the concept of one-third using teaching aids.

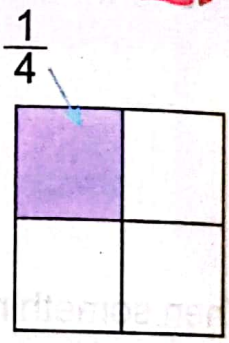
Fraction in Numerical Form

A triangle has two equal parts. One part is coloured which represents one-half. It is written as $\frac{1}{2}$.





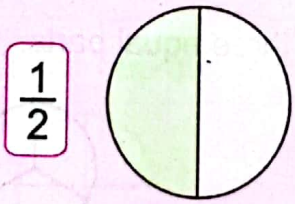
A circle has three equal parts. One part is coloured which represents one-third. It is written as $\frac{1}{3}$.

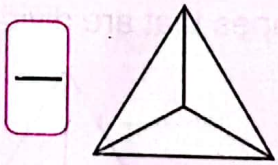


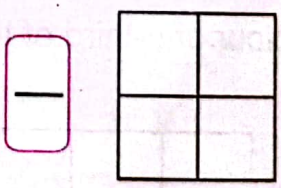
A square has four equal parts. One part is coloured which represents one-quarter. It is written as $\frac{1}{4}$.

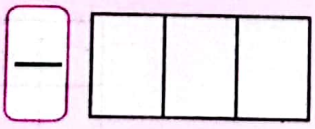
Try Yourself

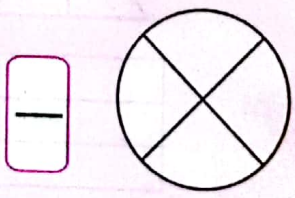
Colour one part of each shape and write fraction for the coloured part.

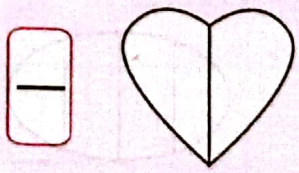






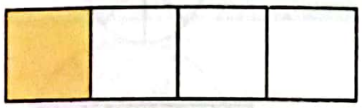
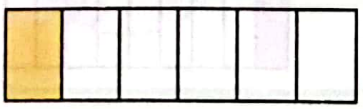
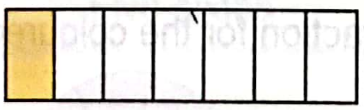
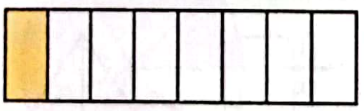
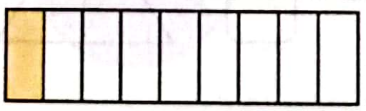
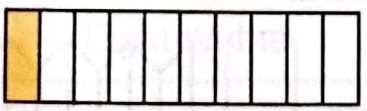






Students have learnt the concept of fractions. So, explain the numerical form of fraction and tell them how to write fractions.

Fractions $\frac{1}{2}$ to $\frac{1}{10}$

Figure	Number of parts	Name of Fraction	Fraction
	2	Half	$\frac{1}{2}$
	3	One-third	$\frac{1}{3}$
	4	One-fourth	$\frac{1}{4}$
	5	One-fifth	$\frac{1}{5}$
	6	One-sixth	$\frac{1}{6}$
	7	One-seventh	$\frac{1}{7}$
	8	One-eighth	$\frac{1}{8}$
	9	One-ninth	$\frac{1}{9}$
	10	One-tenth	$\frac{1}{10}$

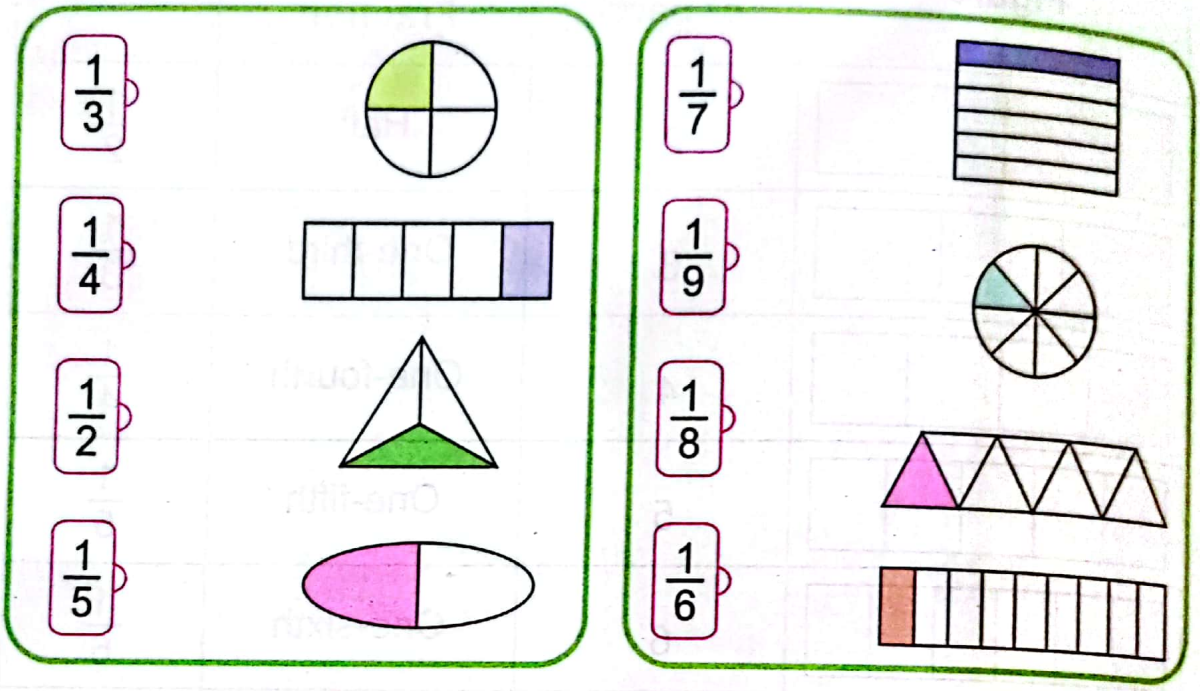
Try Yourself

Can two quarters together make a whole?

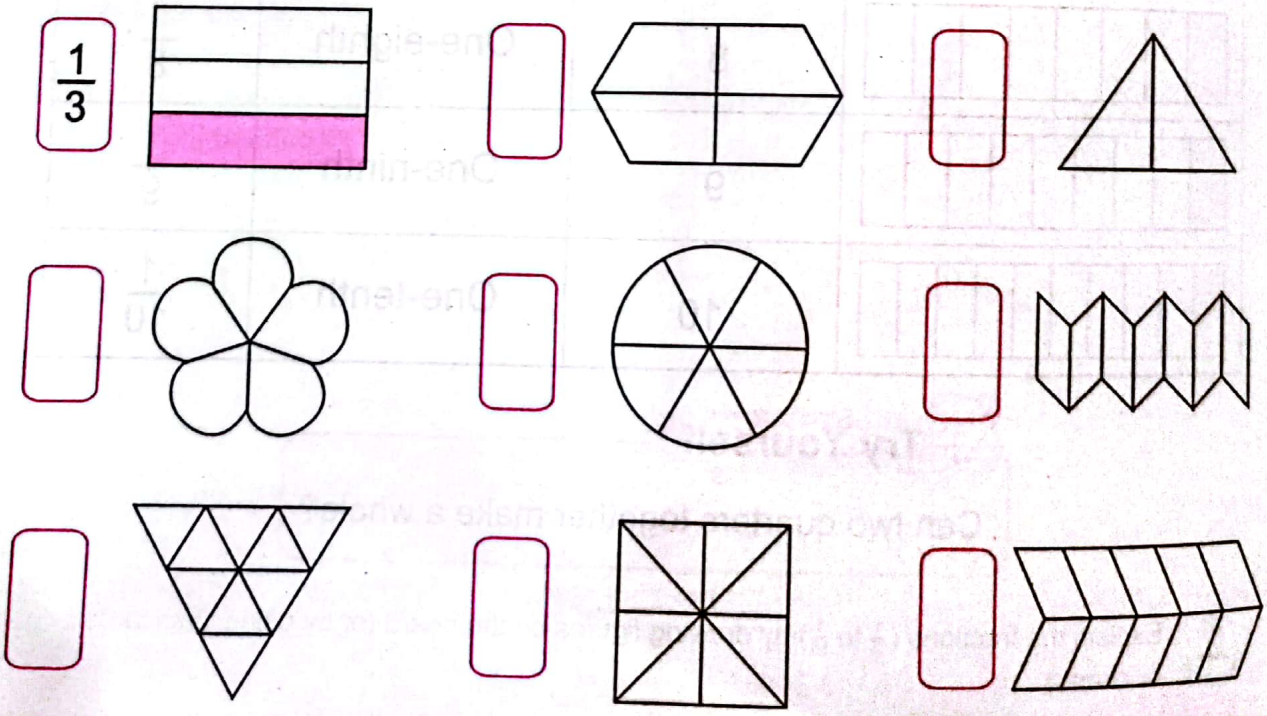
Explain the fractions ($\frac{1}{2}$ to $\frac{1}{10}$) by drawing figures on the board (or by using flashcards or charts).

Exercise 1

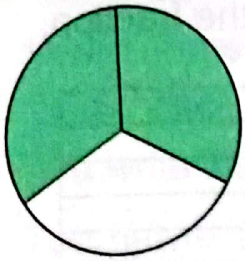
1. Match the shape with the given fraction.



2. Colour one part of each shape and write fraction for the coloured part.

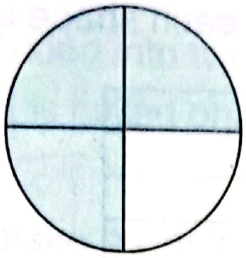


More About Fractions



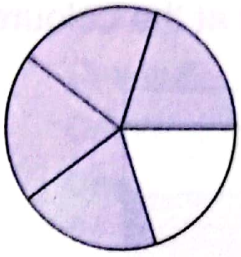
$\frac{2}{3}$

Two-thirds



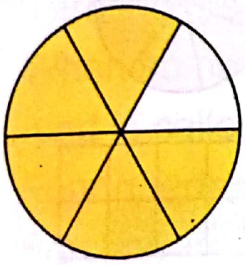
$\frac{3}{4}$

Three-forths



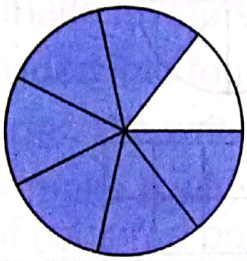
$\frac{4}{5}$

Four-fifths



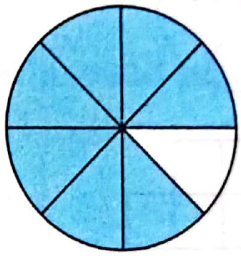
$\frac{5}{6}$

Five-sixths



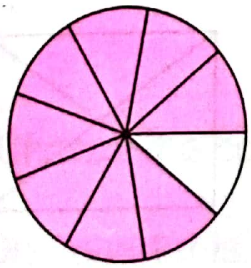
$\frac{6}{7}$

Six-sevenths



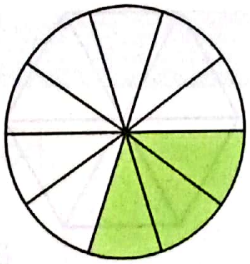
$\frac{7}{8}$

Seven-eights



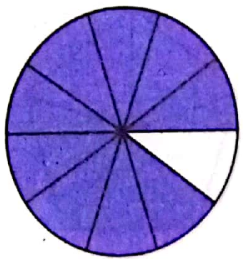
$\frac{8}{9}$

Eight-ninths



$\frac{3}{10}$

Three-tenths



$\frac{9}{10}$

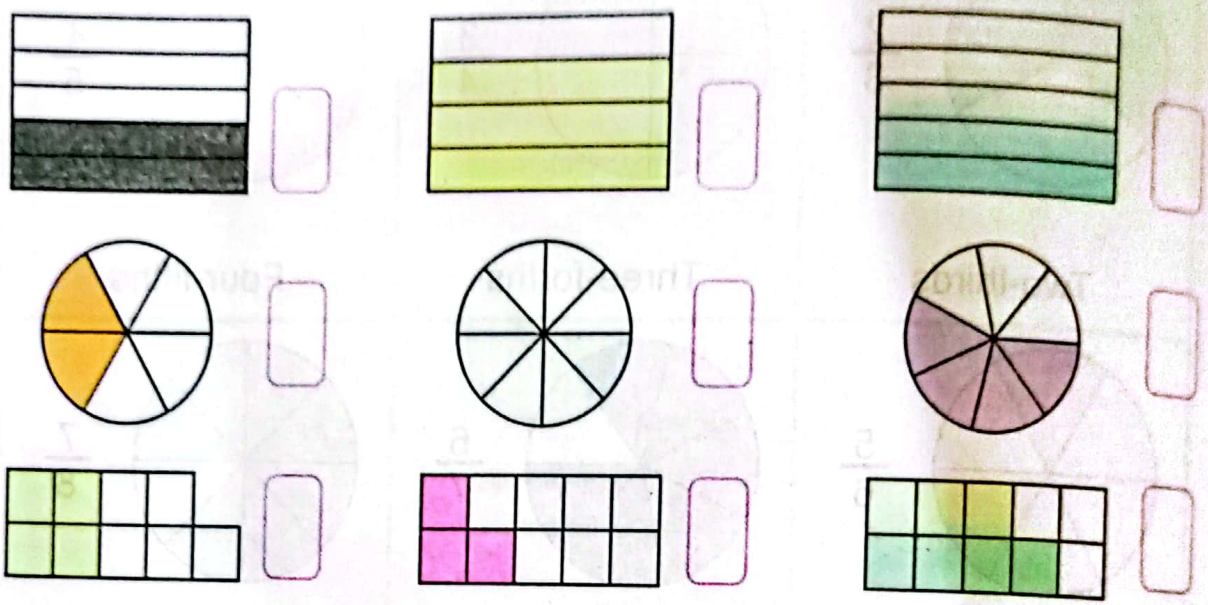
Nine-tenths

$$\text{Fraction} = \frac{\text{Number of coloured parts}}{\text{Total number of equal parts}}$$

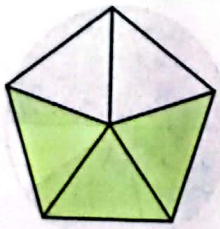
Ask the students to learn the names of fractions using teaching aids (charts, flashcards, etc) and also explain with figures.

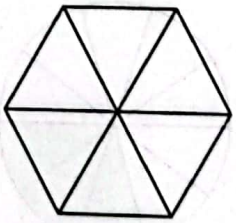
Exercise 2

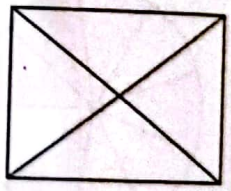
1. Look at the coloured part of each shape and write the fraction.

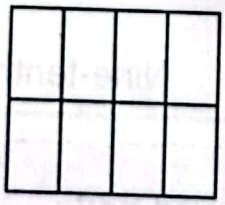


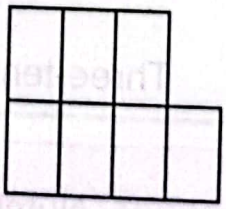
2. Colour the shape for the given fraction.

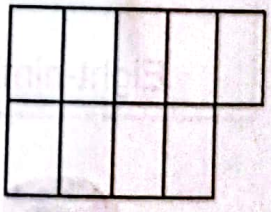
$\frac{3}{5}$ 

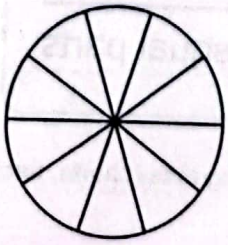
$\frac{5}{6}$ 

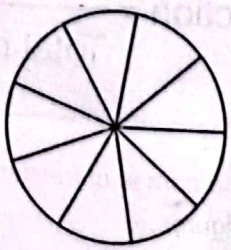
$\frac{3}{4}$ 

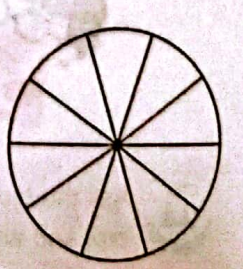
$\frac{7}{8}$ 

$\frac{2}{7}$ 

$\frac{5}{9}$ 

$\frac{6}{10}$ 

$\frac{7}{9}$ 

$\frac{9}{10}$ 

I Have Learnt

- Equal parts have the same shape and the same size.
- When something is divided into two equal parts, each equal part is called one-half. We write it as $\frac{1}{2}$.
- Two halves together make a whole.
- When something is divided into three equal parts, each equal part is called one-third. We write it as $\frac{1}{3}$.
- Three thirds together make a whole.
- When something is divided into four equal parts, each equal part is called one-quarter. We write it as $\frac{1}{4}$.
- Four quarters together make a whole.
- Fraction = $\frac{\text{Number of coloured parts}}{\text{Total number of equal parts}}$

Vocabulary

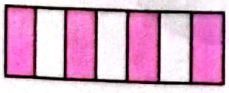
- Fraction
- One-half
- One-third
- One-quarter

Review Exercise

1. Choose the correct option.

i. One-quarter is written as _____.

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{1}{4}$ (d) $\frac{4}{1}$

ii.  The coloured parts of the shape represent _____.

(a) $\frac{3}{7}$ (b) $\frac{7}{4}$ (c) $\frac{7}{3}$ (d) $\frac{4}{7}$

iii. Equal parts have the same shape and the same _____.

(a) length (b) size (c) colour (d) width

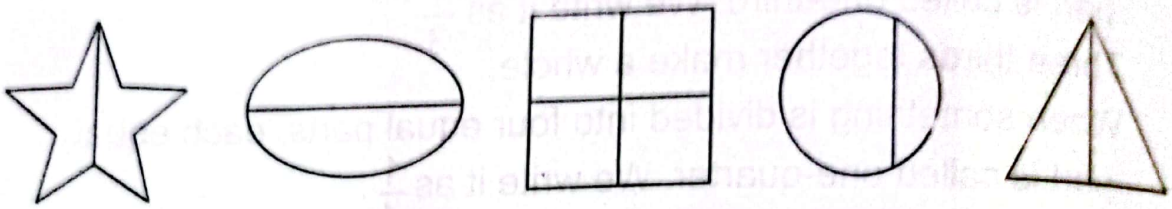
vi. _____ is called four-fifths.

(a) $\frac{4}{5}$ (b) $\frac{5}{4}$ (c) $\frac{4}{6}$ (d) $\frac{5}{6}$

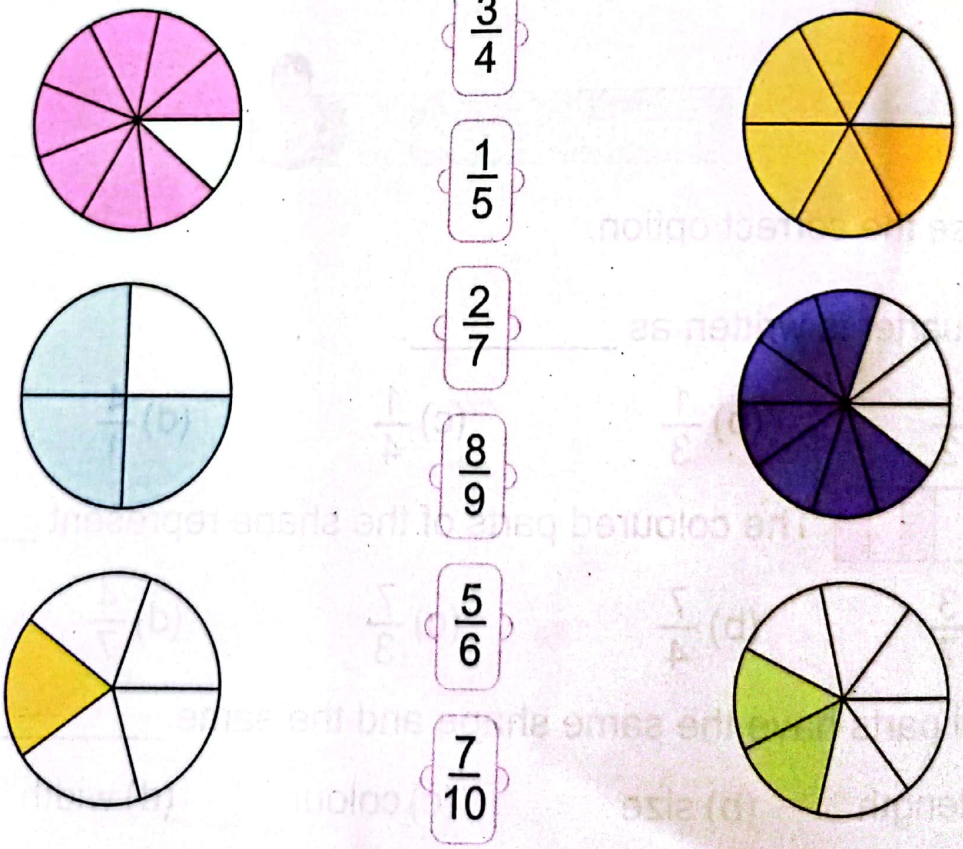
v. _____ = $\frac{\text{Number of coloured part}}{\text{Total number of equal part}}$

(a) Half (b) one-third (c) Quarter (d) fraction

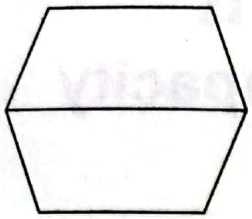
2. Colour the shapes that are divided into halves.

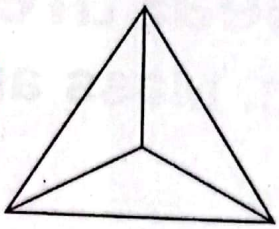


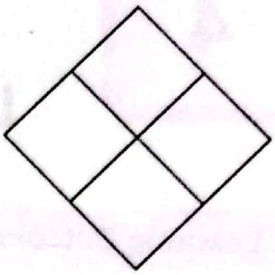
3. Match the cloured shapes with the correct fraction.

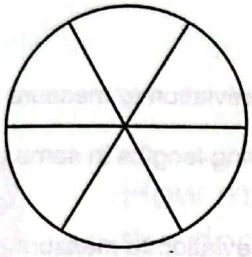


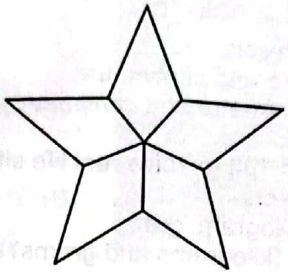
4. Look at the fraction and colour each shape.

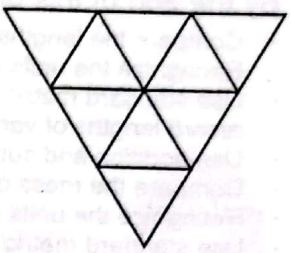
$\frac{1}{2}$ 

$\frac{1}{3}$ 

$\frac{1}{4}$ 

$\frac{5}{6}$ 

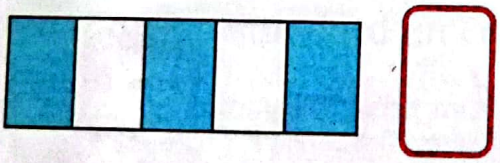
$\frac{3}{5}$ 

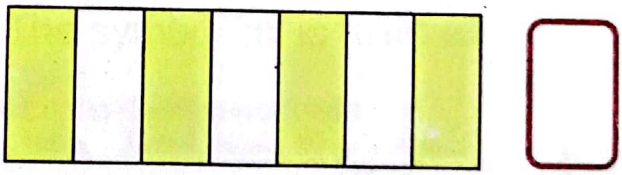
$\frac{7}{9}$ 

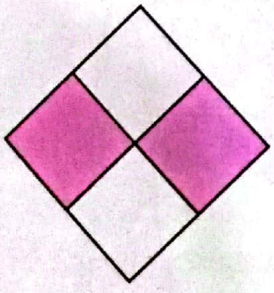
5. Write the fraction for the coloured part of each shape.

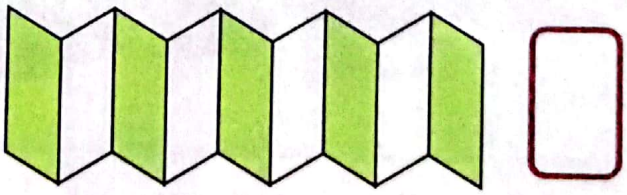
Hint

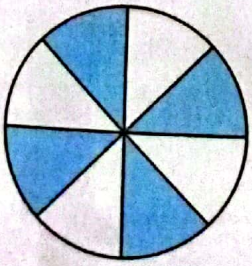
Count the coloured parts and write the fraction.

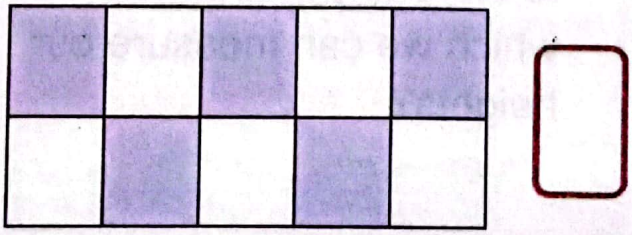












Unit 4

Measurement
Length, Mass and Capacity

Learning Outcomes

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

- Compare the lengths of different objects.
- Recognize the units of length (metre and centimetre).
- Use standard metric units of length (metre and centimetre) and their abbreviation to measure and record lengths of variety of objects.
- Use addition and subtraction within 100 to solve real life situations involving lengths in same units.
- Compare the mass of different objects.
- Recognize the units of mass, i.e. kilogram, gram.
- Use standard metric units of mass (kilograms and grams) and their abbreviation to measure and record mass of variety of objects.
- Use addition and subtraction within 100 to solve real life situations involving mass in same units.
- Compare capacity of different objects using nonstandard units (jug, glass, cup, etc.).
- Recognize and use the standard metric units of capacity, i.e. litre and millilitre.
- Use addition and subtraction within 100 to solve real life situations involving capacity in same units.

Length

How much longer is the door than the window? How can we find?

The door is longer than the window.

To measure the exact length of objects, we need the standard units of length.

Metre

Metre is the standard unit of length. The symbol 'm' is used for metre.

The length of tree, pole, almirah, door, window, etc are measured in metres.

Key Fact

The length, width and height of longer objects are measured in metres.

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

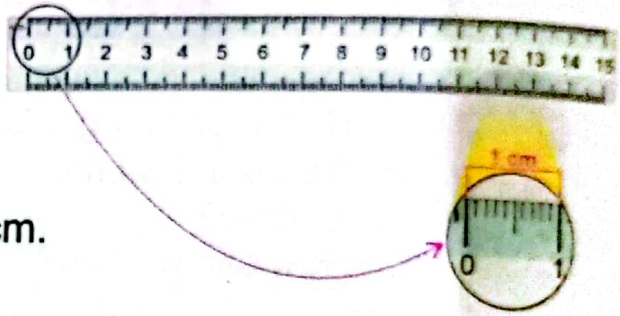
How much longer is the blue pencil than the red pencil?

Can we use metre scale to measure the length of a pencil?
No, let us learn how to measure the length of short objects.

Centimetre

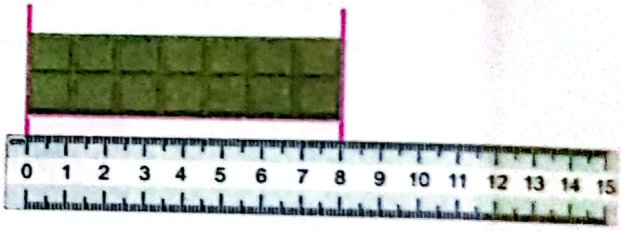
Centimetre is also the standard unit of length. The symbol 'cm' is used for centimetre.

The ruler is divided into 15 equal parts. The length of each part is 1 cm.



The length of pencil, notebook, chocolate, etc are measured in centimetres.

The length of chocolate is 8 cm.



Key Fact

- Centimetres are used to measure the lengths of short objects.
- 1m = 100 cm

Class Activity

Measure and record the lengths of objects which are in the classroom using metre rod and ruler.

Length of the longest object in the classroom = _____

Length of the shortest object in the classroom = _____

TEACHING POINT

- Help the children to measure the lengths of short objects (pencil, eraser, sharpener, notebook, etc) using ruler.
- To perform the classroom activity, measure the lengths of objects (board, door, notebook, pencil, etc).

Exercise 1

1. In the following objects, which will be measured in metres (m) and which will be in centimetres (cm)?

i. The height of a tree ☐

ii. The length of your notebook ☐

iii. The length of school bus ☐

iv. The height of your home ☐

v. The length of your lunch box ☐

vi. The length of a door ☐

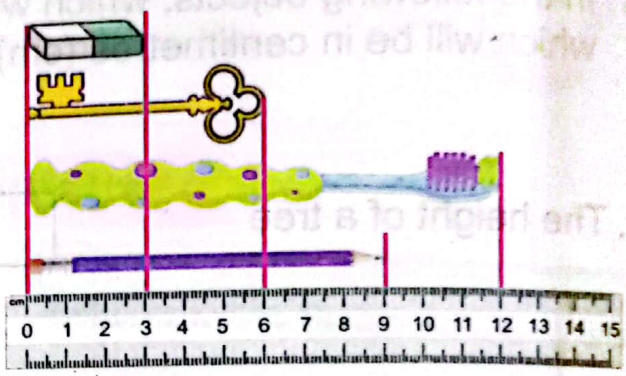
2. (a) Write the lengths for the given objects.

i. The length of the pencil _____

ii. The length of the key _____

iii. The length of the toothbrush _____

iv. The length of the eraser _____



(b). Read the lengths of the above objects and fill in the blanks.

i. The pencil is longer than the _____.

ii. The toothbrush is longer than the _____.

iii. The key is shorter than the _____.

iv. The eraser is shorter than _____.

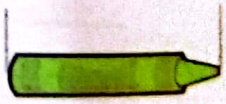
Try Yourself

In your school bag, find an object which is smaller than your eraser and measure its length.

3. Measure the lengths of the following objects using ruler.

_____ cm

_____ cm



_____ cm

Addition and Subtraction of Lengths

I have a 25 cm long red ribbon and a 18 cm long green ribbon. What is the total length of both ribbons?

Length of the red ribbon	=	① 2 5 cm
Length of the green ribbon	=	+ 1 8 cm
Total length	=	4 3 cm

So, the total length of both ribbons is 43 cm.

Also tell which ribbon is longer and how much?

Length of the red ribbon	=	① ⑩ ~~2~~ 5 cm
Length of the green ribbon	=	− 1 8 cm
Difference in lengths	=	7 cm

So, the red ribbon is longer
The length of the red ribbon is 7cm longer than the green ribbon.

Observe the following.

① 5 3 m	
+ 2 9 m	
8 2 m	

⑥ ⑩ ~~7~~ 2 cm	
− 3 4 cm	
3 8 cm	

Addition and subtraction of lengths are same as addition and subtraction of whole numbers. Tell the students to write the units of length when adding and subtracting the lengths.

Exercise 2

1. Solve the following.

10 m + 8 m	14 m + 16 m	24 cm + 39 cm	50 cm + 17 cm
48 m + 43 m	67 cm + 27 cm	79 m + 12 m	89 cm + 8 cm

2. Solve the following.

15 m − 6 m	28 m − 12 m	57 cm − 28 cm	40 cm − 13 cm
71 m − 32 m	69 cm − 19 cm	85 m − 58 m	98 cm − 29 cm

3. Nadia bought 18 m of white cloth and 15 m of green cloth. How much cloth did Nadia buy altogether?

So, Nadia bought _____ m cloth altogether.

4. The length of Ahmad's lunch box is 24 cm and the length of his brother's lunch box is 18cm. Which lunch box is longer and how much?

So, _____ lunch box is long and _____ long in length.

Mass

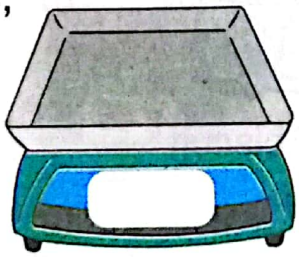
How much heavier is the flour bag than the watermelon?
How will we find?

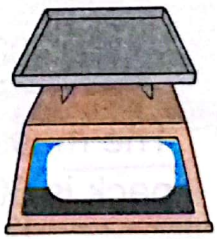
To measure the accurate mass of objects, we need the standard unit of mass.

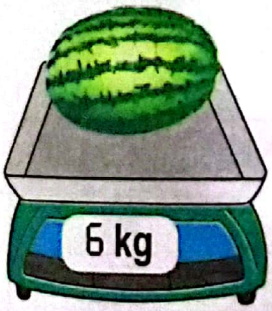
Kilogram

The standard unit of mass is kilogram. The symbol 'kg' is used for kilogram. It is used to measure the mass of heavy objects like flour bag, watermelon, etc.

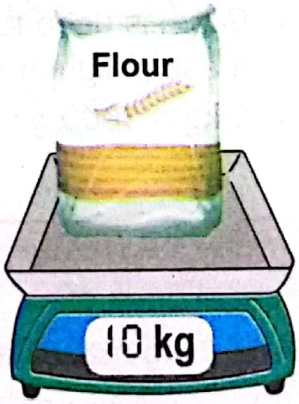
To measure the mass of heavy objects, we use different type of balances and weighing machines.







The mass of watermelon is 6 kg.



The mass of flour is 10 kg.

Key Fact

Kilogram is used to measure the mass of heavy objects.

So, the mass of flour bag is 4 kg more than the watermelon.

Measure the mass of classroom objects using weighing machine and teach them using participatory approach.

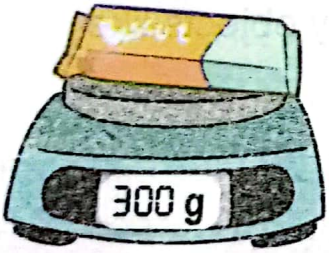
The book is heavier than the pencil.
How much heavier is the book?
How can we find it?

Let us learn how we measure the mass of lighter objects.

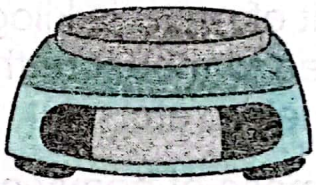
Gram

Gram is the standard unit of mass. The symbol 'g' is used for gram. It is used to measure the mass of lighter objects like pencil, biscuit, etc.

To measure the mass of lighter objects, we use different type of balances and weighing machines.



The mass of biscuit pack is 300 g.

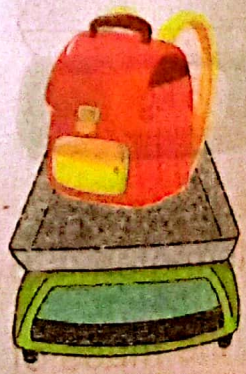


Key Fact

- Gram is used to measure the mass of lighter objects.
- 1 kg = 1000 g

Class Activity

Measure and record the mass of school bags of students in the classroom using a weighing machine.



The mass of the heaviest school bag = ...

The mass of the lightest school bag = ...

Exercise 3

1. In the following objects, which will be measured in kilograms (kg) and which will be measured in grams (g)?

i. The mass of a biscuit ☐ 

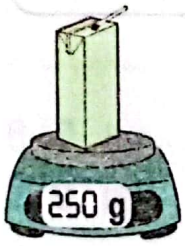
ii. The mass of apples ☐ 

iii. The mass of a chocolate ☐ 

iv. The mass of a pencil ☐ 

v. The mass of a sugar bag ☐ 

2. Read and write the mass.



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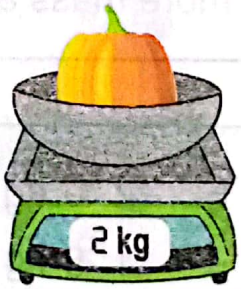

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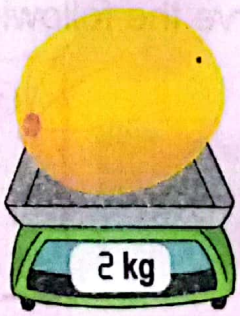
Try Yourself

Read the mass of a melon and salt.

Which is heavier? Write its name.

_____



Addition and Subtraction of Masses

My father bought 20 kg of apples and 15 kg of guavas. What is the total mass of fruit?

Mass of the apples	=	2 0 kg
Mass of the guavas	=	+ 1 5 kg
The mass of fruit	=	3 5 kg

So, the total mass of fruit is 35 kg.

Which fruit is having more mass and how much?

Mass of the apples	=	① ⑩ 2 0 kg
Mass of the guavas	=	– 1 5 kg
Difference in mass	=	5 kg

So, mass of the apples is 5 kg more than the guavas.

Observe the following.

	① 4 5	g
+	1 7	g
	6 2	g

	⑤ ⑩ 6 6	g
–	2 8	g
	3 8	g

TEACHING POINT

Addition and subtraction of masses are same as the addition and subtraction of whole numbers. Tell the students to write units of mass when adding and subtracting the masses.

Exercise 4

1. Solve the following.

16 kg + 9 kg	27 kg + 19 kg	30 g + 40 g	53 g + 27 g
63 kg + 29 kg	46 g + 36 g	72 g + 27 g	85 kg + 9 kg

2. Solve the following.

18 kg − 9 kg	35 kg − 16 kg	42 g − 23 g	60 g − 25 g
67 kg − 29 kg	51 g − 22 g	88 g − 49 g	99 kg − 36 kg

3. Maryam bought 60 g of red pepper and 35 g of black pepper. Tell the total mass of both peppers.

So, the total mass of both peppers is _____.

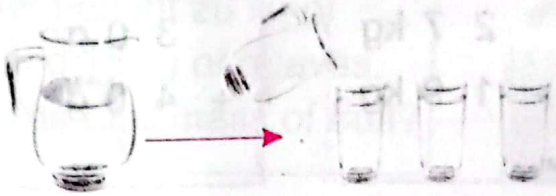
4. A grocer buys 85 kg of potatoes.

He sells 48 kg of potatoes. How much potatoes are left?

So, _____ of potatoes are left.

Capicity

I fill three glasses of water with a jug.



The jug holds more water.
The glass holds less water than the jug.

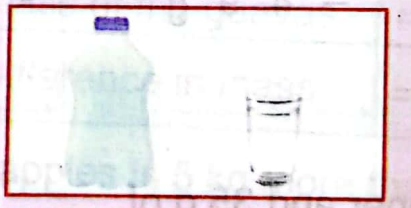
The basket holds more water than the bowl.

Key Fact

The larger the container, the more capacity it will have.

Try Yourself

Tick (✓) the container which has more capacity.



TEACHING POINT

Demonstrate to the students to fill glasses of water with a jug. Explain the capacity of different containers.

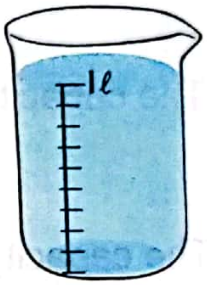
Standard Unit of Capacity

A teapot holds more tea than a cup. How can we find, how much more tea the teapot holds?

To measure accurate capacity of the containers, we need the standard units of capacity.

Litre

Litre is the standard unit of capacity.
The symbol 'ℓ' is used for litre.
Water, milk and petrol are measured in litres.



Millilitre

Millilitre is also the standard unit of capacity.
The symbol 'mℓ' is used for millilitre.
It is used to measure the capacity of small containers.
The capacity of glass, cup, etc are measured in millilitres.

Key Fact

- The capacity of large containers are measured in litres and the capacity of small containers is measured in millilitres.
- $1\ell = 1000\ m\ell$

Exercise 5

1. The capacity of which containers can be measured in litres (ℓ) and which will be in millilitres (mℓ)?

i. The capacity of a tub ☐ ℓ

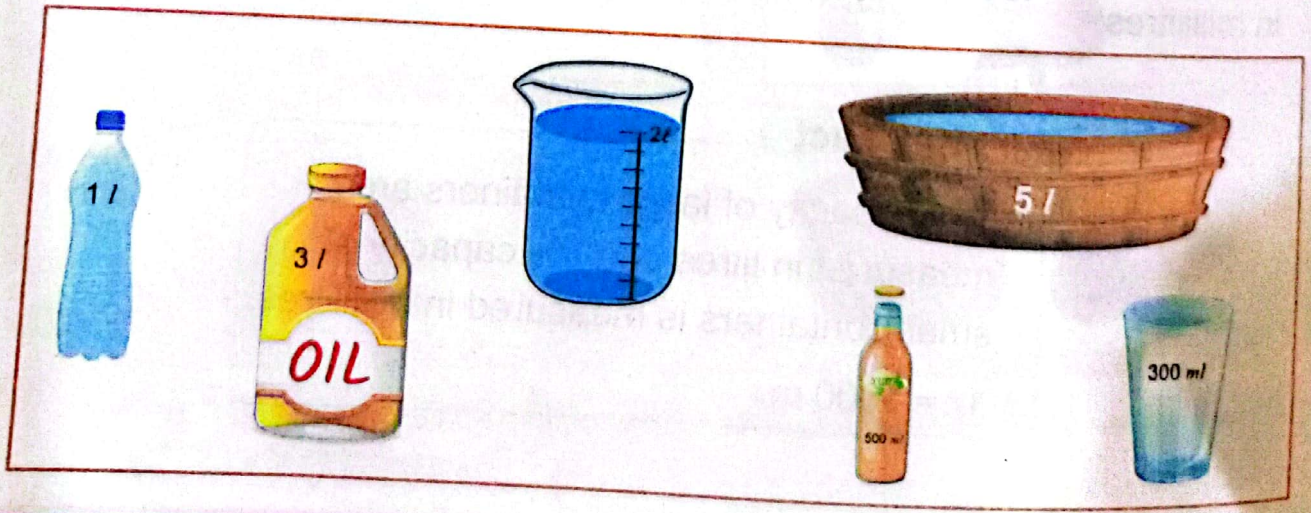
ii. The capacity of a cup ☐

iii. The capacity of a spoon ☐

iv. The capacity of a jug ☐

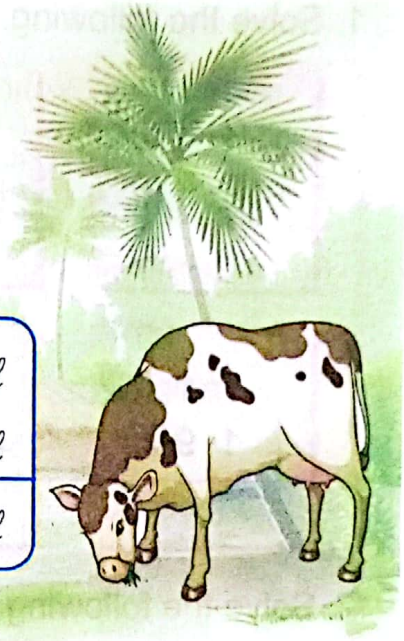
v. The capacity of a inkpot ☐

2. Encircle the containers that have capacity in litres.



Addition and Subtraction of Capacity

I live in a village. My cow gives 12 ℓ of milk in the morning and 9 ℓ of milk in the evening. Tell how much milk it gives in one day.



The quantity of milk in the morning	=	1 2 ℓ
The quantity of milk in the evening	= +	9 ℓ
Total quantity of milk	=	2 1 ℓ

So, the cow gives 21 ℓ of milk in a day.

I know, my cow gives more milk in the morning. Tell how much more milk it gives.

The quantity of milk in the morning	=	1 2 ℓ
The quantity of milk in the evening	= –	9 ℓ
Difference in quantity	=	3 ℓ

So, the cow gives 3 ℓ more milk in the morning.

Observe the following.

① 3 5 mℓ	③ ⑩ 4 3 mℓ
+ 4 6 mℓ	– 1 6 mℓ
8 1 mℓ	2 7 mℓ

Addition and subtraction of capacities is same as the addition and subtraction of whole numbers. Tell the students to write the units of capacity when adding and subtracting the capacities.

Exercise 6

1. Solve the following.

22 mℓ + 14 mℓ	38 ℓ + 15 ℓ	40 mℓ + 18 mℓ	54 mℓ + 37 mℓ
71 ℓ + 19 ℓ	65 mℓ + 25 mℓ	85 ℓ + 10 ℓ	49 mℓ + 49 mℓ

2. Solve the following.

11 mℓ − 9 mℓ	20 ℓ − 12 ℓ	32 mℓ − 13 mℓ	55 mℓ − 26 mℓ
73 ℓ − 48 ℓ	67 mℓ − 28 mℓ	81 ℓ − 59 ℓ	90 mℓ − 45 mℓ

3. Irfan put 18 ℓ of petrol on Monday and 14 ℓ of petrol on Tuesday in his car. How much petrol did he put in his car in two days?

4. A milkman bought 75 ℓ of milk and sold 68 ℓ of milk. How much milk did left with him?

I Have Learnt

- to compare the length of different objects.
- to recognize the metre and centimetre as the standard units of length.
- to add and subtract the standard units of length.
- to use the standard units of length in real life.
- to compare the mass of different objects.
- to add and subtract the standard units of mass.
- to use the standard units of mass in real life.
- to compare the capacity of different objects.
- to recognize the litre and millilitre as the standard units of capacity.
- to add and subtract the standard units of capacity.
- to use the standard units of capacity in real life.

Vocabulary

- Length
- Metre
- Centimetre
- Mass
- Kilogram
- Gram
- Capacity
- Litre
- Millilitre

Review Exercise

1. Choose the right option.

i. The height of a tree is measured in _____.

(a) millilitres (b) litres (c) centimetres (d) metres

ii. The standard unit of capacity is _____.

(a) metre (b) litre (c) gram (d) kilogram

iii. The symbol of kilogram is _____.

(a) g (b) mℓ (c) kg (d) m

iv. The length of short objects is measured in _____.

(a) millilitres (b) centimetres (c) grams (d) metres

v. Kilogram is the standard unit of _____.

(a) length (b) width (c) capacity (d) mass

2. Tick (✓) the suitable unit to measure the following objects.

The mass of chips packet	g	kg
The length of geometry box	cm	m
The capacity of a water tank	mℓ	ℓ
The height of a pole	cm	m
The mass of a chair	g	kg

3. Solve the following.

37 cm + 18 cm	83 kg + 16 kg	59 mℓ + 29 mℓ	67 g + 13 g

4. Solve the following.

65 mℓ − 56 mℓ	93 ℓ − 47 ℓ	77 kg − 58 kg	91 m − 22 m

5. A shopkeeper bought 80 ℓ of ice-cream. He sold 52 ℓ of ice-cream in a day. How much ice-cream left with him?

_____ = _____

_____ = _____

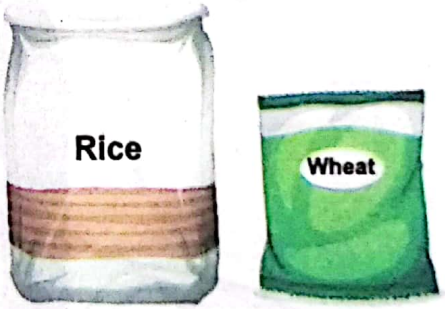
_____ = _____

6. The mass of a wheat bag is 15 kg more than a rice bag. If the mass of the rice bag is 48 kg, then find the mass of the wheat bag.

_____ = _____

_____ = _____

_____ = _____

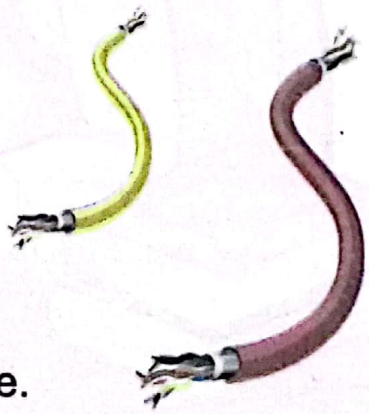


7. The length of a red wire is 90 m while the length of a yellow wire is 72 m. Which wire is longer and how much?

_____ = _____

_____ = _____

_____ = _____



So, _____ wire is long.

It is _____ longer than the _____ wire.

Unit 5

Time

Learning Outcomes

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

- Recognize the number of hours in a day and numbers of minutes in an hour.
- Read and write the time from a clock in hours and minutes (with five-minute intervals).
- Recognize a.m. and p.m.
- Draw hands of a clock to show time in hours and minutes (with five minutes intervals).
- Use Solar calendar to find a particular date/day.
- Use Islamic calendar to find a particular date/day.

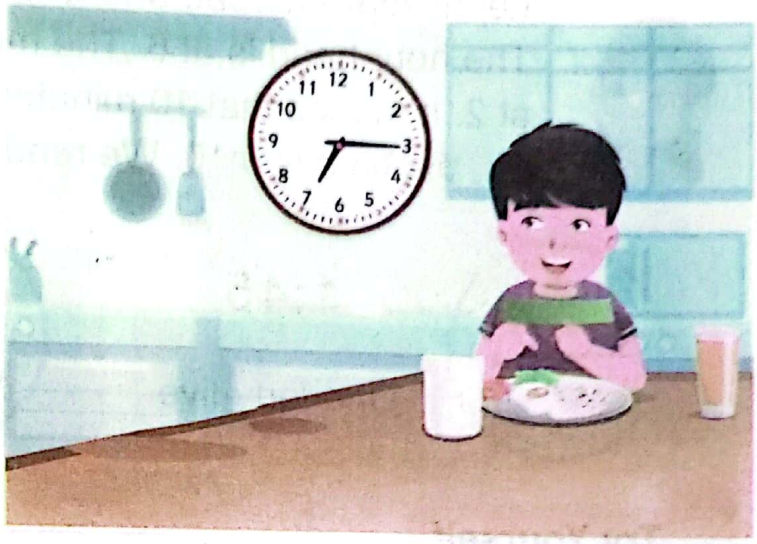
Amna goes to school at 7:00 o'clock in the morning.

She does her homework at 5 o'clock in the evening.

Is there any difference in writing the time of morning and evening?

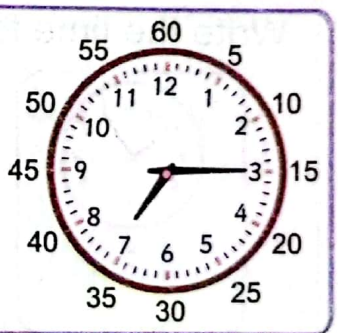
Hours and Minutes

Ahmed takes breakfast and goes to school.
Can you write the time of the clock?
Let us together, write the time of the clock.
Look at the clock carefully.



The dial of the clock is divided into 12 big parts. The big part is further divided into 5 equal small parts. One small part represents one minute.

The dial of the clock is divided into 60 equal small parts.



The minute hand moves from one number to the other number in 5 minutes.
When the minute hand completes one round in 60 minutes, then the hour hand moves to the next number.
So, there are 60 minutes in an hour.

Key Fact

60 minutes = 1 hour
24 hours = 1 day

There are 24 hours in a day because hour hand completes two rounds in a day.

- For effective teaching and learning, use 'Urdu or local language' as medium of instruction to explain the concept of time.
- Demonstrate about the minute and hour hands using a big clock.

Reading and Writing the Time

Let us learn to read and write time.
The hour hand is at 6. The minute hand is at 2. It means that 10 minutes have passed.
So, the time is 6:10. We read it as 'six ten'.

1:45

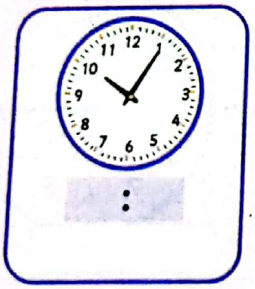
One forty-five

3:20

Three twenty

Try Yourself

Write the time for each clock.



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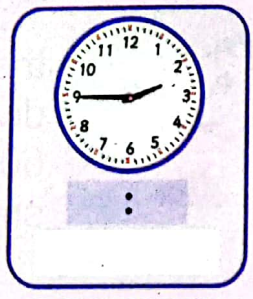

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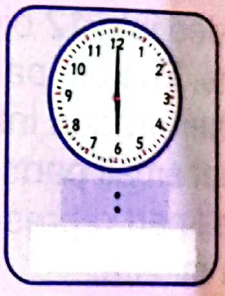

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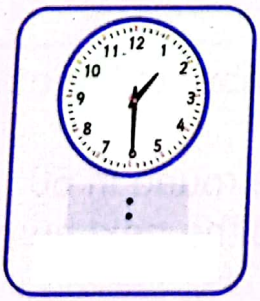

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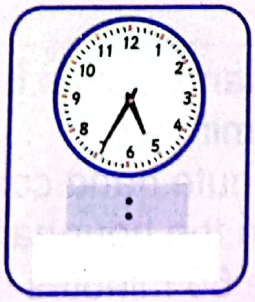

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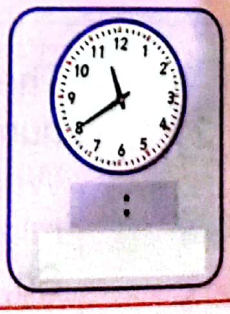

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Key Fact

When minute hand is at 12, then we write '00' (zero) minutes.

Encourage the students to read and write time (with 5 minute-intervals) using a clock or chart.

Using of a.m and p.m in Time

There are 24 hours in a day. Hour hand of a clock completes two rounds in 24 hours.

12 hours

Noon

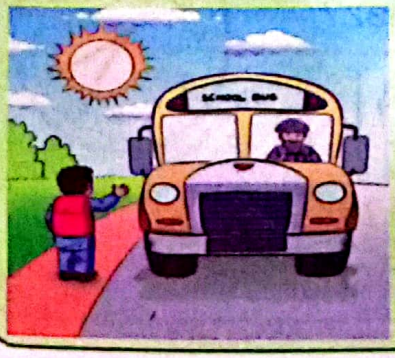
12 hours

Night

We write a.m (ante-meridiem) with time which lies between 12:00 mid-night to 12:00 noon.

We write p.m (post-meridiem) with time which lies between 12:00 noon to 12:00 mid-night.

Ali goes to school in the morning at 7 o'clock. We write it as 7:00 a.m

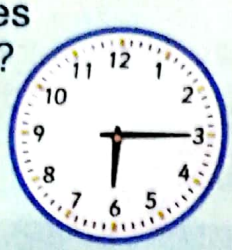


Ali completes homework in the evening at 7 o'clock. We write it as 7:00 p.m

Encourage/help the students to use of a.m. or p.m with time using the textbook page or chart or flashcards (including pictures showing different activities in a day).

Look at the each picture and clock. Write time in a.m and p.m

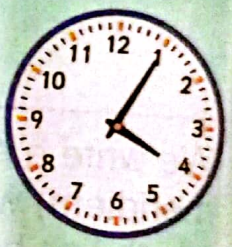
At what time does Fatima wake up?



At what time does Fatima take breakfast?

At what time does Fatima come back from school?

At what time does Fatima do homework?



At what time does Fatima play in the evening?

At what time does Fatima offer Fajr Namaz?

TEACHING POINT

Instruct and guide the students to make a chart showing different activities of a day (wake up time to sleeping time) using 'a.m' or 'p.m' time.

Drawing Hands of the Clock

The small hand shows 'hours' and the big hand shows 'minutes'.

4:35

1:15

Try Yourself

Read the time and draw hands of the clock.

9:40

8:05

2:20

7:55

10:10

6:30

3:30

11:25

Key Fact

We do not write a.m and p.m with 12 O'clock.
We write it as 12:00 noon or 12:00 mid-night.

Guide and help the students to draw the hands of the clock and advise them to take care about the size of the hands (small and big) of the clock.

Solar Calendar

There are 365 or 366 days in a solar year. There are 12 months in the year. A calendar is the record of all months, dates and days of the year.

Calendar

January

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

February

Mon	Tue	Wed	Thus	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March

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

April

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

May

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

June

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

July

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

August

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

September

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

October

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

November

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

December

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

TEACHING POINT

Display a calendar on the board and explain the method to find a date and a day in the calender.

Try Yourself

Write the name of days for the given dates using the calendar.

Date	Day	Date	Day
10 January	Sunday	14 August	
23 March		31 July	
5 October		9 November	
6 September		1 May	
22 June		25 December	
5 February		21 April	

- Encircle the date and month of your birthday on the calender.
- Tick (✓) the date and month of the independance of Pakistan.

Key Fact

- The Earth completes one revolution around the sun in 365 days. Therefore, there are 365 days in a year.
- February is the shortest month of the year. It has 28 or 29 days.
- There are 30 or 31 days in a solar month in general.

Islamic / Lunar Calendar

There are 354 or 365 days in a lunar year.
There are 12 months in the year.

Calendar

Muharram

Sun	Mon	Tue	Wed	Thus	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

Safar

Sun	Mon	Tue	Wed	Thus	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	

Rabi-ul-Awwal

Sun	Mon	Tue	Wed	Thus	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			

Rabi-ul-Sani

Sun	Mon	Tue	Wed	Thus	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	

Jammadi-ul-Awwal

Sun	Mon	Tue	Wed	Thus	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	

Jammadi-ul-Sani

Sun	Mon	Tue	Wed	Thus	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			

Rajab

Sun	Mon	Tue	Wed	Thus	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				

Sha'ban

Sun	Mon	Tue	Wed	Thus	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						

Ramadan

Sun	Mon	Tue	Wed	Thus	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		

Shawwal

Sun	Mon	Tue	Wed	Thus	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				

Zul-Qadah

Sun	Mon	Tue	Wed	Thus	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					

Zul-Hajjah

Sun	Mon	Tue	Wed	Thus	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

TEACHING POINT

Tell and help the students to learn the names of the months of a lunar year in order, with the help of chart or textbook page or lunar calendar.

Try Yourself

Write the name of days for the given dates using the calendar.

Date	Day	Date	Day
10 Muharram	Monday	27 Ramadan	
18 Jammadi-ul -Awwal		12 Rabi-ul-Awwal	
5 Safar		1 Shawal	
20 Jammadi-ul -Sani		19 Zul-Qadah	
29 Rajab		10 Zul-Hajjah	
25 Rabi-ul-Sani		25 Sha'ban	

- Encircle the months on the calender in which we celebrate Eids.
- Tick (✓) the month in which Muslims fast.

Key Fact

- The lunar calendar is also known as the Hijri and Islamic calendar.
- There are 29 or 30 days in a lunar month, depending upon the sighting of the new moon.

I Have Learnt

- there are 24 hours in a day.
- there are 60 minutes in an hour.
- to read and write time (with 5 minute-intervals.
- to use a.m. and p.m.
- to draw hands of the clock to show the given time.
- there are 365 or 366 days in a solar year.
- there are 354 or 355 days in a lunar year.
- there are 12 months in a solar year and a lunar year.
- a calendar is the record of the all months, dates and days in a year.
- to find date/day using the calender.

Vocabulary

- p.m and a.m
- Solar year
- Lunar year
- Calendar

Review Exercise

1. Choose the right option.

i. 1 hour = _____ minutes

(a) 10 (b) 30 (c) 50 (d) 60

ii. The hour hand completes _____ rounds in a day.

(a) 1 (b) 2 (c) 3 (d) 4

iii. We write _____ with time which lies between 12:00 mid-night to 12:00 noon.

(a) a.m (b) p.m (c) noon (d) night

iv. In the solar year, the shortest month is _____.

(a) January (b) May (c) February (d) December

v. Muslims fast in the month of _____.

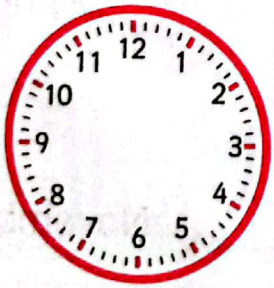
(a) Muharram (b) Rajab (c) Shaban (d) Ramadan

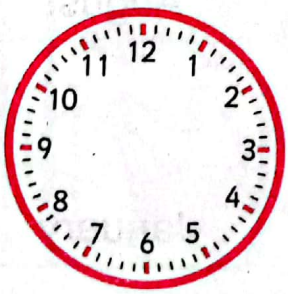
2. Write the time.

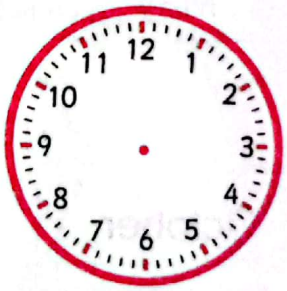


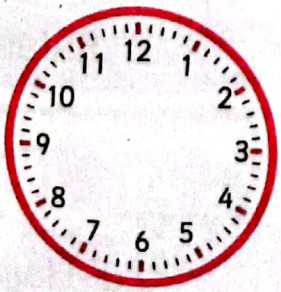


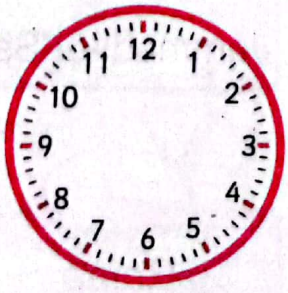

3. Draw the hands of each clock according to the given time.

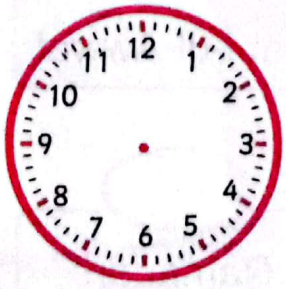

3:40


8:50


10:10


2:20


7:55


12:00

4. Write time with a.m. or p.m by reading the sentence.

Ahmed goes to school at 8 O'clock.	Our family takes dinner at 9:15.	Ayesha wakes up in the morning at 5:30.
Badar plays football in the evening at 4:45.	Maryam offers Zuhar namaz at 2:00.	Hina takes breakfast at 7:25.

5. Write the correct order of the given months.

5th May	August	April
October	January	November

3rd Rabi-ul-Awwal	Jammadi-ul-Sani	Safar
Ramadan	Rajab	Zul-Hajjah

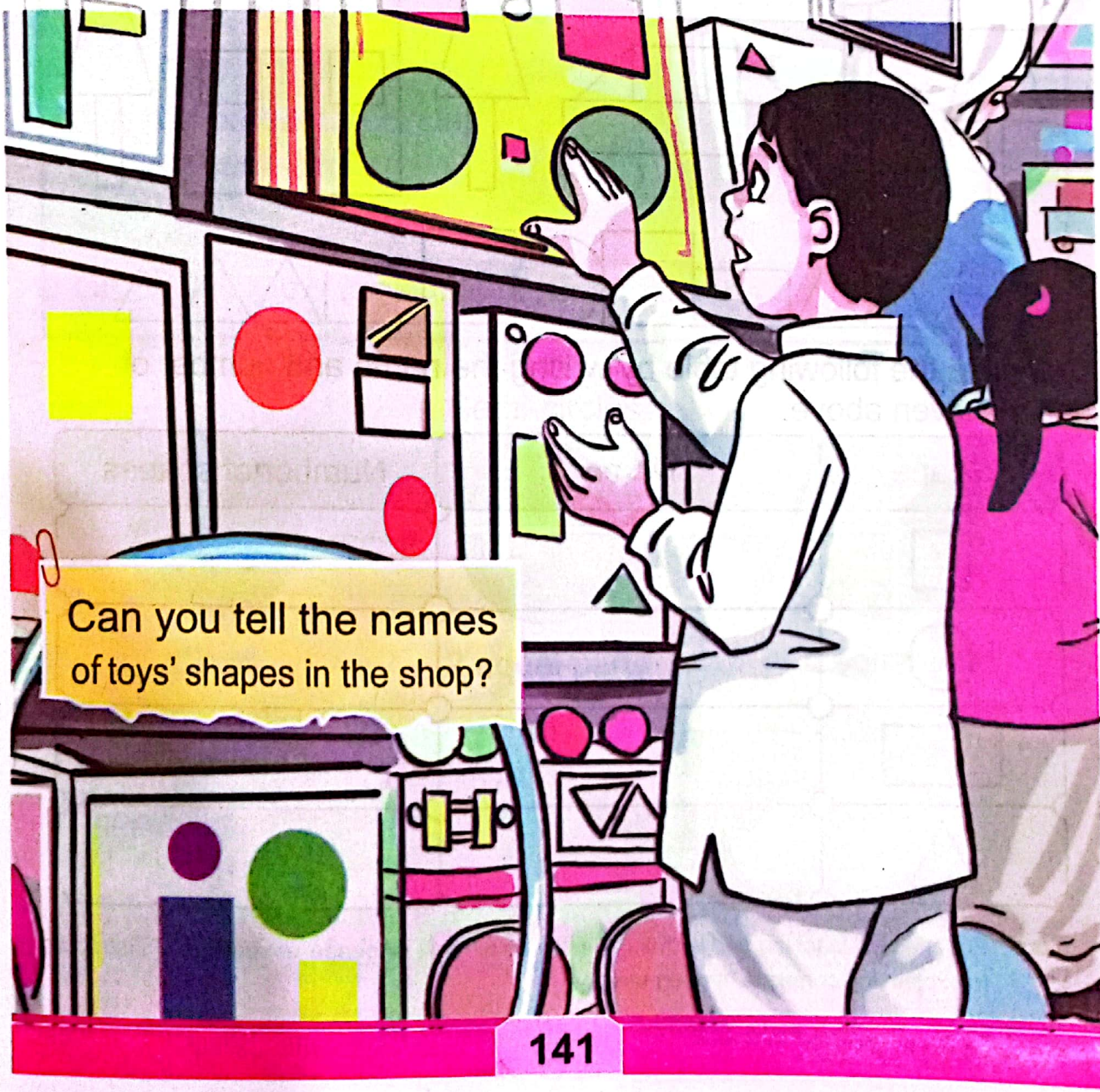
Unit 6

Geometry

Learning Outcomes

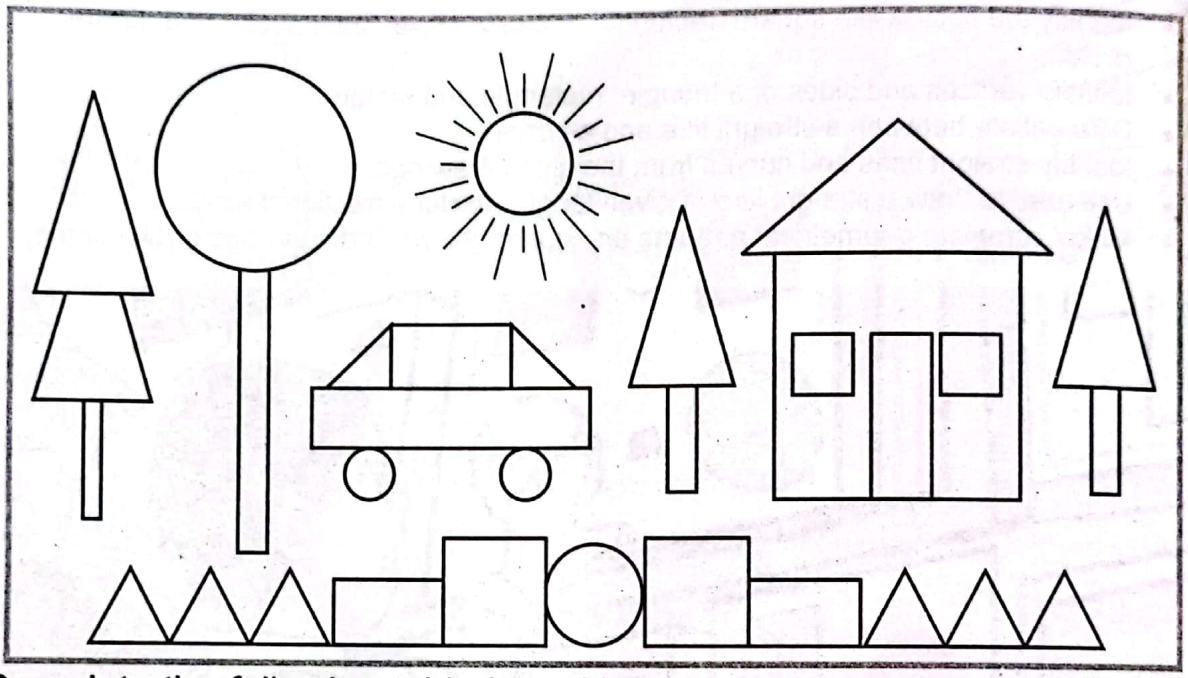
By the end of this unit, you will be able to:

- Identify the figures like square, rectangle, triangle, circle, semi-circle, and quarter-circle.
- Identify vertices and sides of a triangle, rectangle and square.
- Differentiate between a straight line and a curve.
- Identify straight lines and curves from the given drawings.
- Use ruler to draw a straight line of given length (exclude fractional length).
- Make/ complete geometrical patterns on square grid according to one or two of the



Shapes

Let us colour.



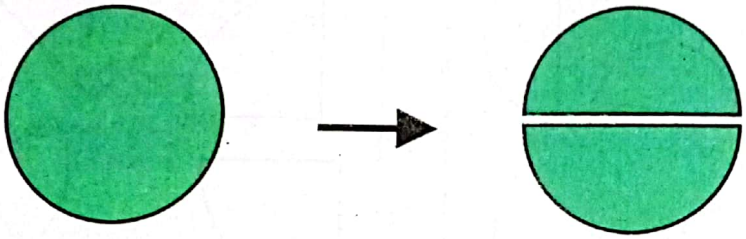
Complete the following table by writing the name and number of shapes given above.

Shape	Name	Number of shapes

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

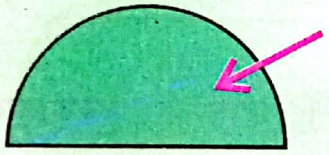
Semi-circle and Quarter-circle

Let us divide a circle into two equal parts.
Can you name the half part of the circle?



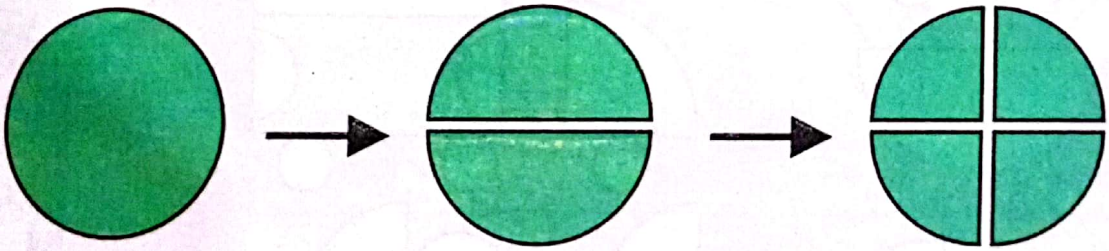
Circle → 2 equal parts

One half part of the circle is called semi-circle.



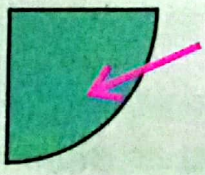
Let us divide the circle into more equal parts.
We get more new shapes.

Semi-circles



Circle → 2 equal parts → 4 equal parts

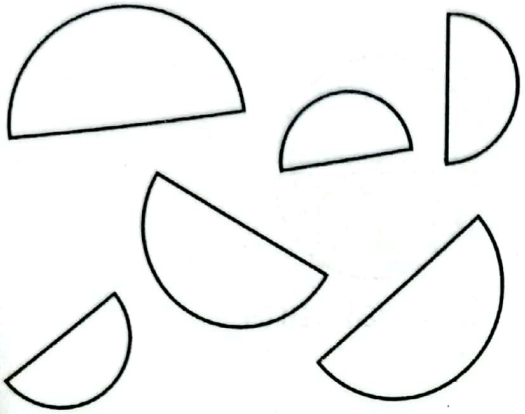
One quarter part of the circle is called quarter-circle.



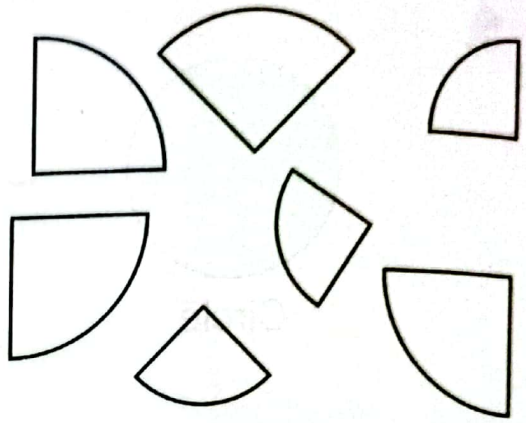
Using the demonstration method, draw a circle on paper. Cut it with scissors. cut the circle at the centre equally and again cut it into more equal parts. Now, explain the concept of semi-circle and quarter-circle.

Different Shapes of Semi-circle and Quarter-circle

Semi-circles

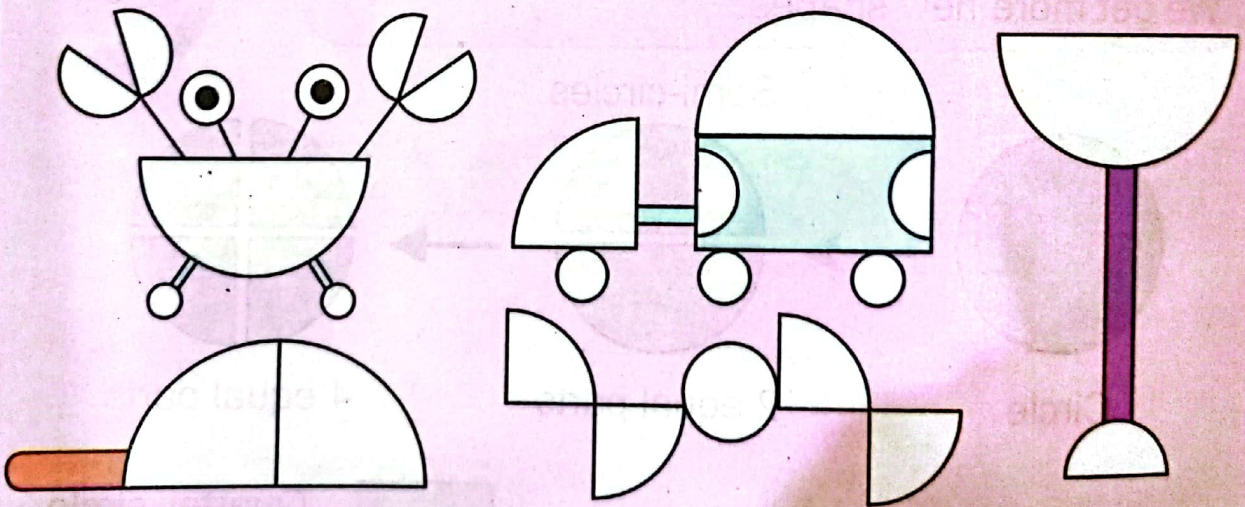


Quarter-circles



Try Yourself

Colour the circle red, semi-circle green and quarter-circle yellow. Write the total number of each shape.



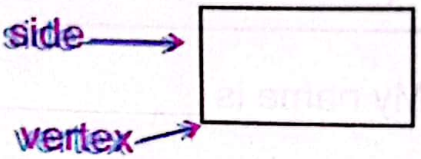
Circles _____ Semi-circles _____ Quarter-circles _____

TEACHING POINT

Draw different shapes (circle, semi-circle and quarter-circle) on the board and explain.

Sides and Vertices of the Shapes

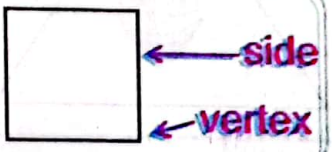
It is a rectangle.
It has 4 sides and
4 vertices.



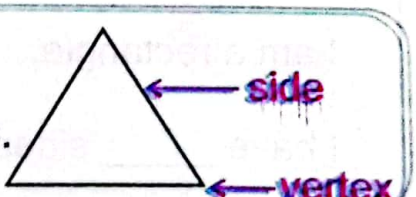
Key Fact

- The plural of side is sides.
- Corner of any shape is called vertex. The plural of vertex is vertices.

It is a square.
It has 4 sides and 4 vertices.
All its sides are equal in length.



It is a triangle.
It has 3 sides and 3 vertices.



Key Fact

- All sides of a sqaure are equal in length.
- Opposite sides of a rectangle are equal in length.
- The sides of a triangle may or may not be equal in length.

Try Yourself

How many sides and vertices does a circle have?

Differentiate between sides and vertices using teaching aids (chart/wooden shapes). Help the students to find sides and vertices of each shape.

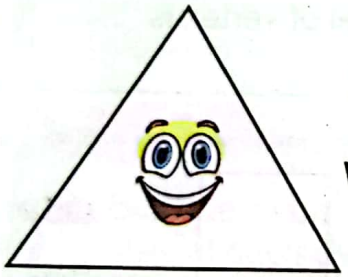
Exercise 1

Complete the following.

My name is _____ .

I have _____ sides and _____ vertices.

My all sides are equal in length.

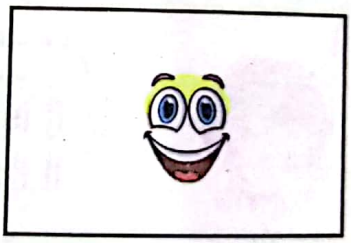


I have _____ sides and _____ vertices.

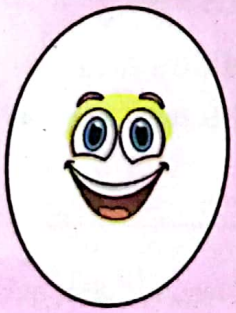
Who am I? _____

I am a rectangle.

I have _____ sides and _____ vertices.



Try Yourself

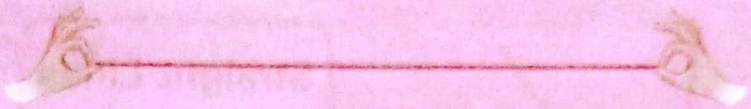


My name is oval.

I have _____ sides and _____ vertices.

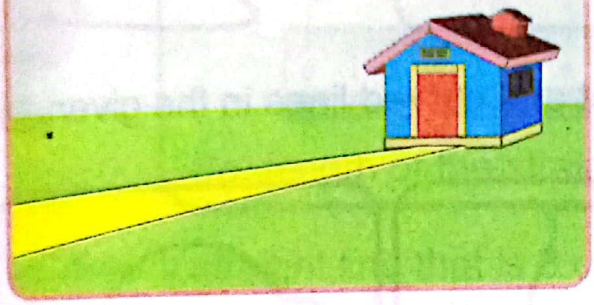
Straight and Curved Lines

I hold a piece of thread in both hands and pull it tightly.

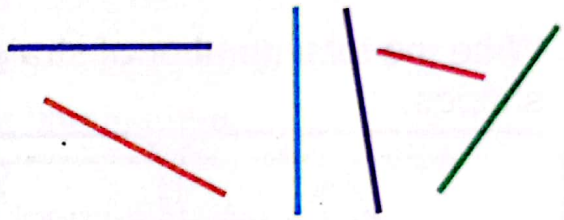


It is like a straight line.

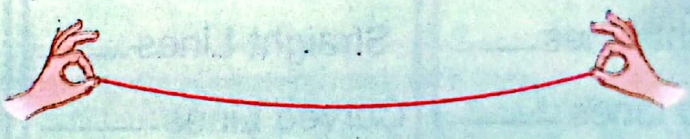
Straight Path



Different Straight Lines

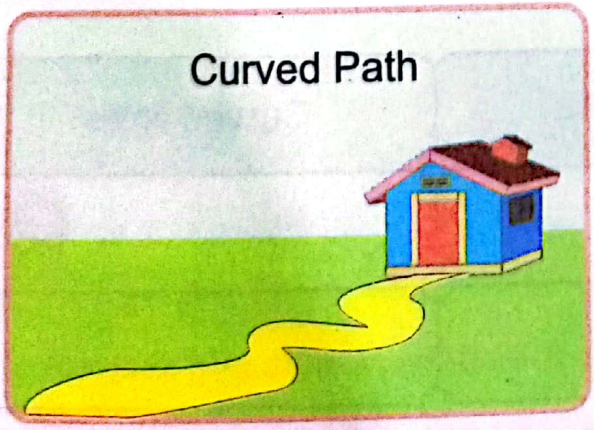


I hold a piece of thread in both hands and loose it.

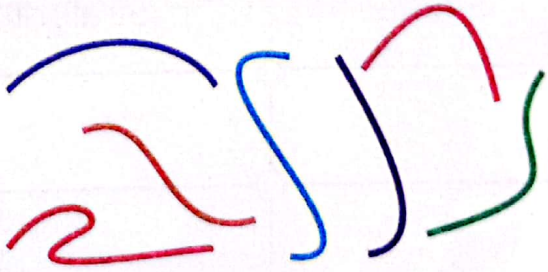


It is like a curved line.

Curved Path



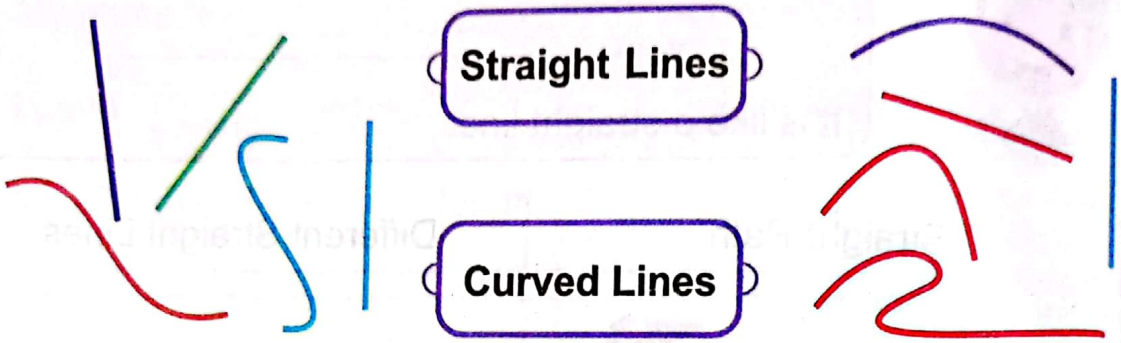
Different Curved Lines



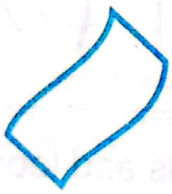
Using demonstration method, instruct them to draw/make lines on board (or using rope or thread).

Exercise 2

1. Match the lines with the correct names.

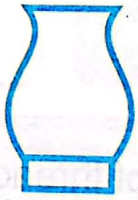


2. Write the total number of straight and curved lines in the given shapes.



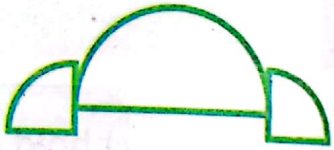
Straight Lines____

Curved Lines____



Straight Lines____

Curved Lines____



Straight Lines____

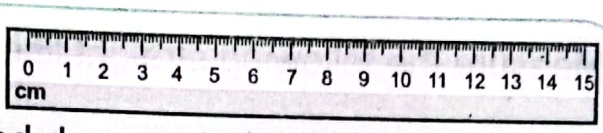
Curved Lines____

3. Write the total number of straight and curved lines in the given shapes.

Shapes	Straight lines	Curved lines

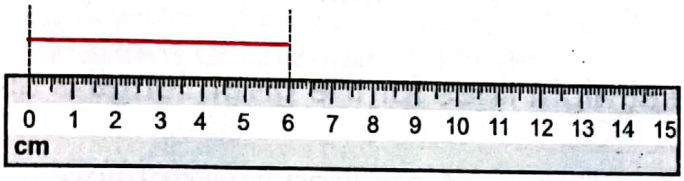
Drawing Straight Line

It is a ruler.



We measure and draw a straight line with the help of the ruler.

Let us measure the length of the given straight line. ——————

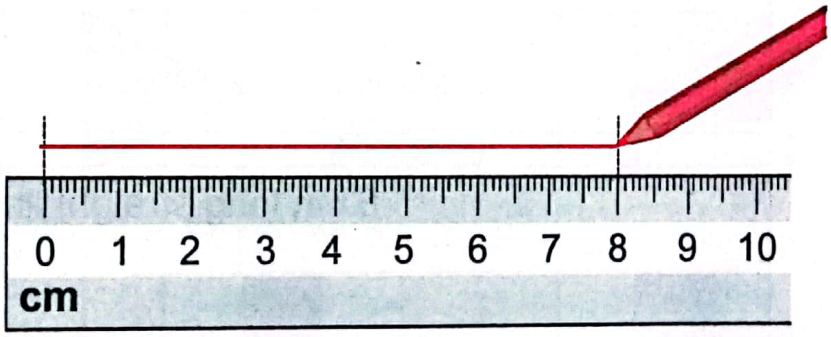


So, length of the straight line is 6 cm.

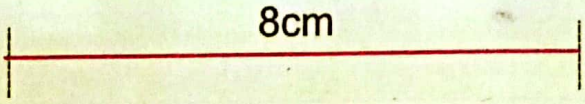
Let us draw a straight line that is 8 cm long using the ruler.

Hold the ruler firmly on the paper.

Draw a straight line from 0 cm to 8 cm with pencil and remove the ruler.



So, you have drawn 8cm long straight line.



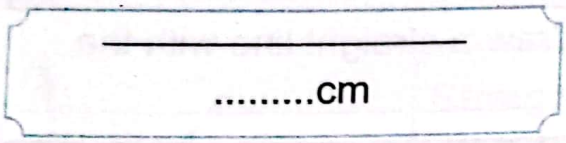
Key Fact

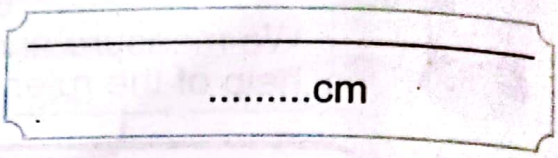
To measure and draw a straight line using the ruler, we start from 0 cm.

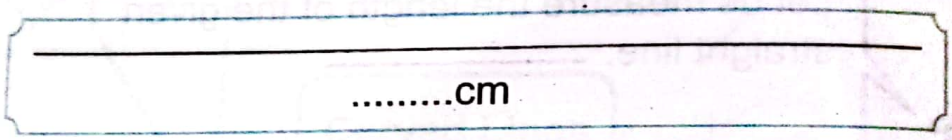
Introduce a ruler and tell about its use. Guide and help the students to measure and draw the straight lines using the ruler.

Exercise 3

1. Measure the following straight lines using ruler and write its lengths.







2. Draw the straight lines for the given lengths using ruler.

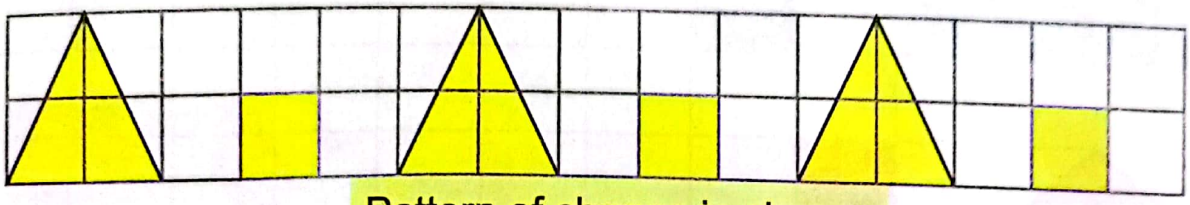
4 cm long straight line

6 cm long straight line

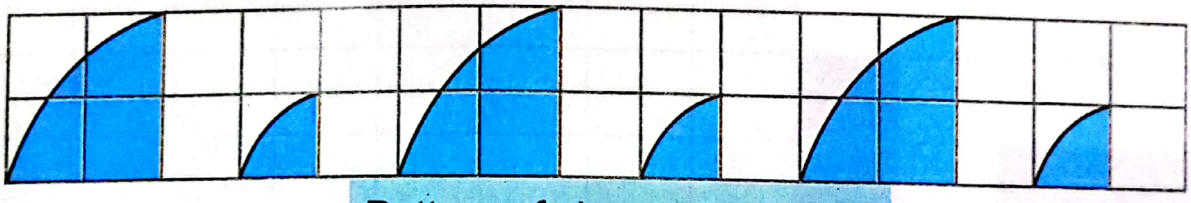
10 cm long straight line

Patterns

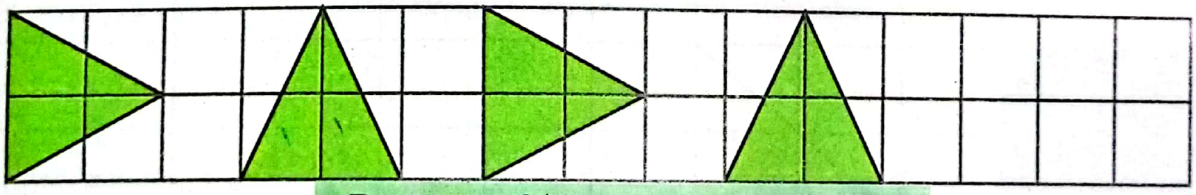
Let us observe the different patterns on a grid.



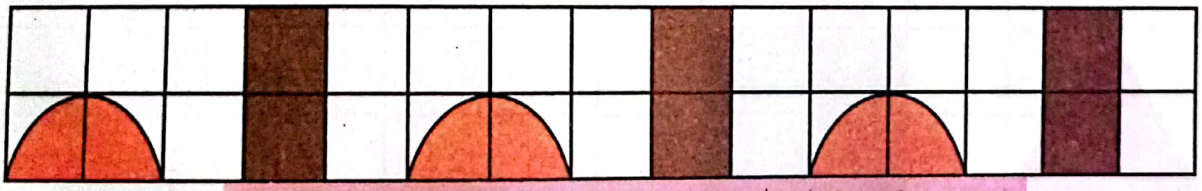
Pattern of change in shape



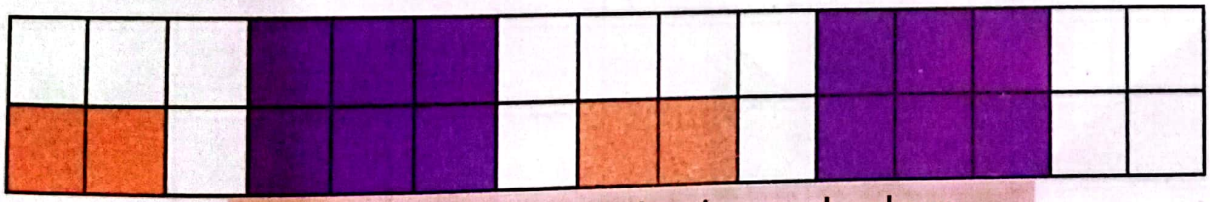
Pattern of change in size



Pattern of change in direction



Pattern of change in shape and colour

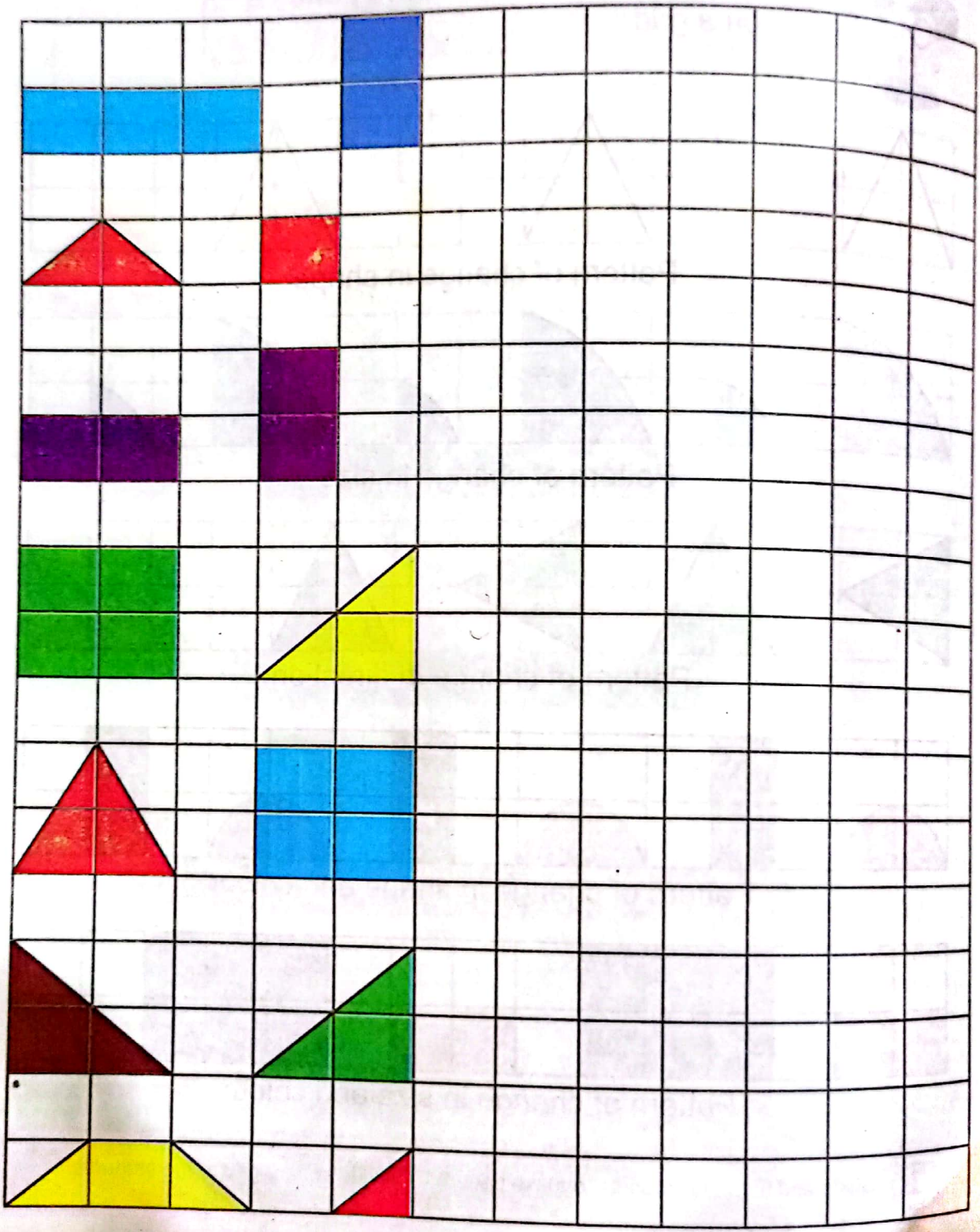


Pattern of change in size and colour

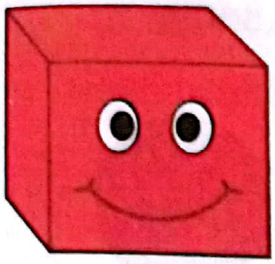
Guide and help the students to make patterns. Provide square grid to the students.

Exercise 4

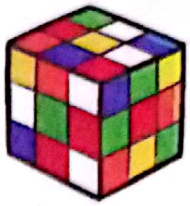
Complete the following patterns and colour.

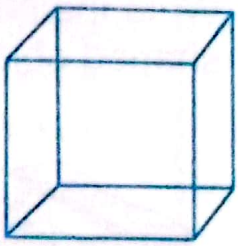


3-D Shapes

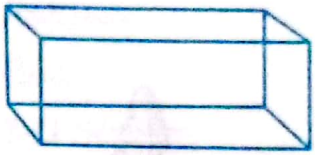


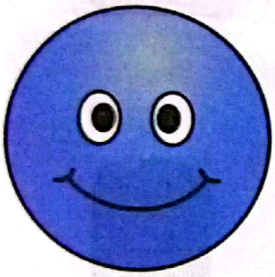
My name is cube.



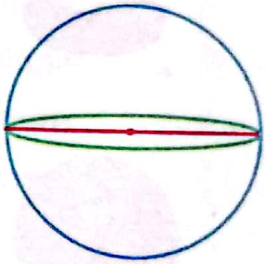


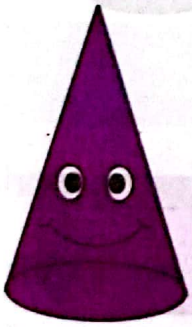
My name is cuboid.



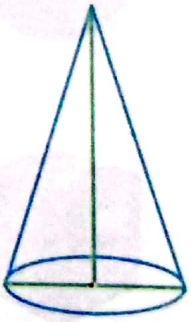


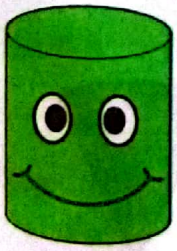
My name is sphere.



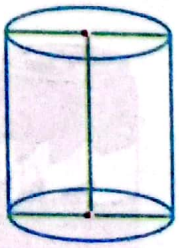


My name is cone.





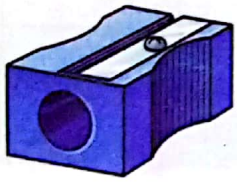
My name is cylinder.

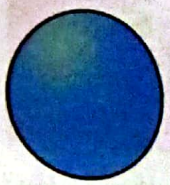


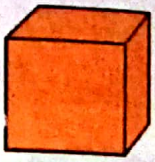
Explain the concept of 3-D shapes using different objects which are in classroom (book, sharpener, etc). Tell the students to learn their names and difference among them.

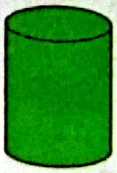
Exercise 5

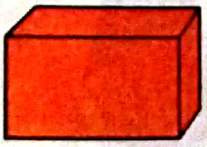
Write the name of each 3-D shape and match with the same shaped objects.

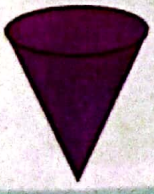












I Have Learnt

- to identify square, triangle, circle, semi-circle and quarter-circle.
- to identify and differentiate between straight line and curved line.
- to draw a straight line using a ruler.
- to make and complete patterns according to the shape, size and orientation.
- to recognize the 3-D shapes; cube, cuboid, cylinder, cone and sphere.

Vocabulary

- Semi-circle
- Quarter-circle
- Straight line
- Curved line
- Ruler
- Patterns
- Grid
- 3-D Shapes
- Cube
- Cuboid
- Cylinder
- Sphere
- Cone

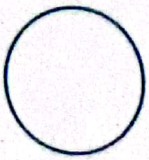
Review Exercise

Choose the right option.

i. Which shape has 3 sides and 3 vertices?

(a) rectangle (b) square (c) triangle (d) circle

ii. _____ It is the shape of a quarter-circle.

(a) 

(b) 

(c) 

(d) 

iii.  is the shape of _____ .

(a) cylinder (b) cone (c) cube (d) sphere

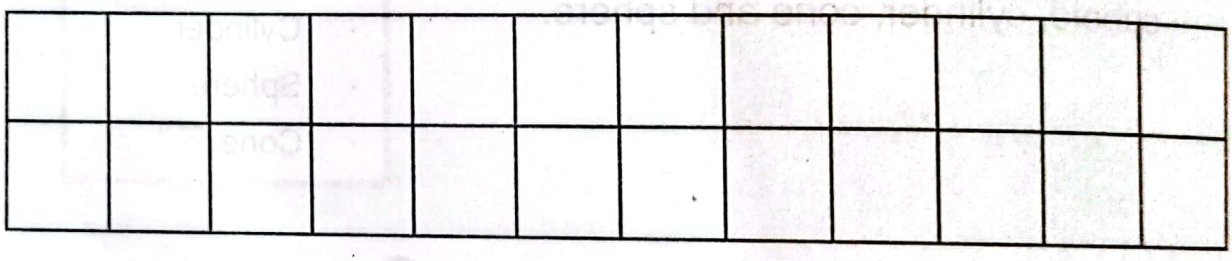
iv. How many curved lines do a semi-circle have?

(a) 0 (b) 1 (c) 2 (d) 3

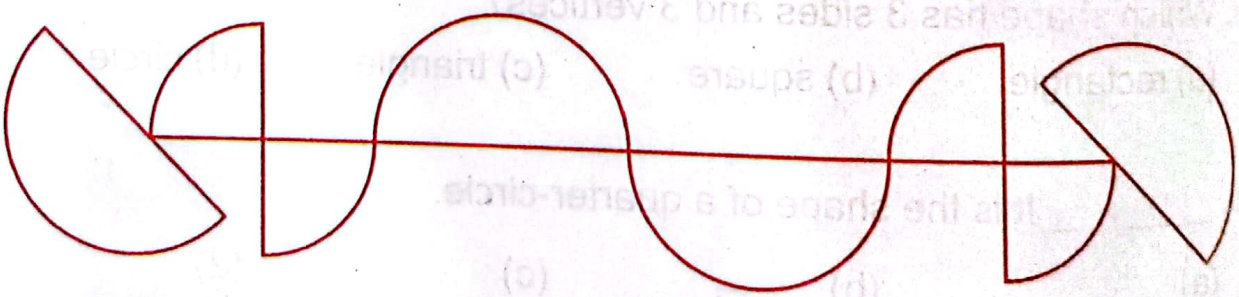
v. How many sides do a circle have?

(a) 0 (b) 1 (c) 3 (d) 4

2. Draw a rectangle, triangle and square using the grid.



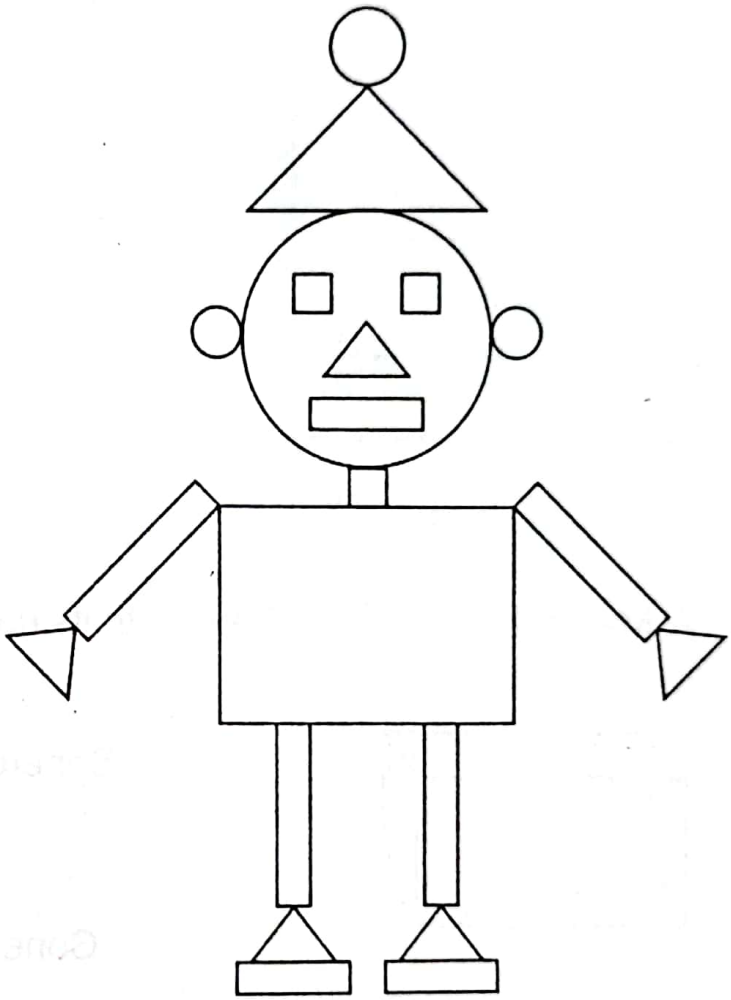
3. Write the total number of semi-circles and quarter-circles in the given shape.



Semi-circles _____ Quarter-circles _____

4. Write the name of each shape and its total number in the given drawing. Colour it.

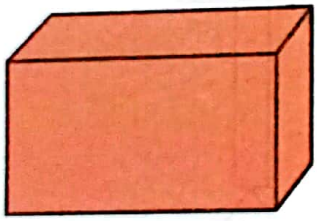
Circle	3

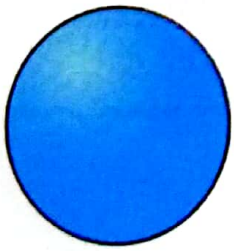


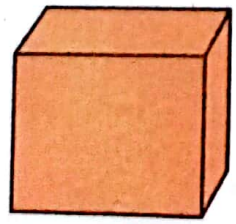
5. Draw a straight line of your own choice.

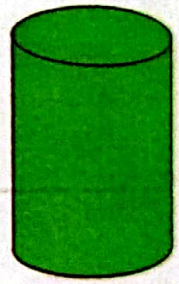
6. Draw two pattern of your own choice and colour them.

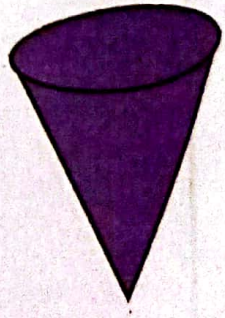
7. Match the each 3-D shape with its name.











Sphere

Cone

Cube

Cylinder

Cuboid

Approved by the Provincial Education Department the Secondary Education Department, Government of Balochistan letter No. SO (Acad:) 2-1/2021/2289-93, Dated October 4th, 2021

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- رشوت لینے اور دینے والا دونوں جہنمی ہیں۔
- بدعنوانی اور رشوت ستانی ضمیر کی موت ہے۔
- بدعنوانی ملکی ترقی کی راہ میں سب سے بڑی رکاوٹ ہے۔
- بدعنوانی اخلاقی دیوالیہ پن کو جنم دیتی ہے۔
- بدعنوانی سے خود بھی بچیں اور دوسروں کو بھی روکیں۔

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مرکزِ یقین شادباد
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