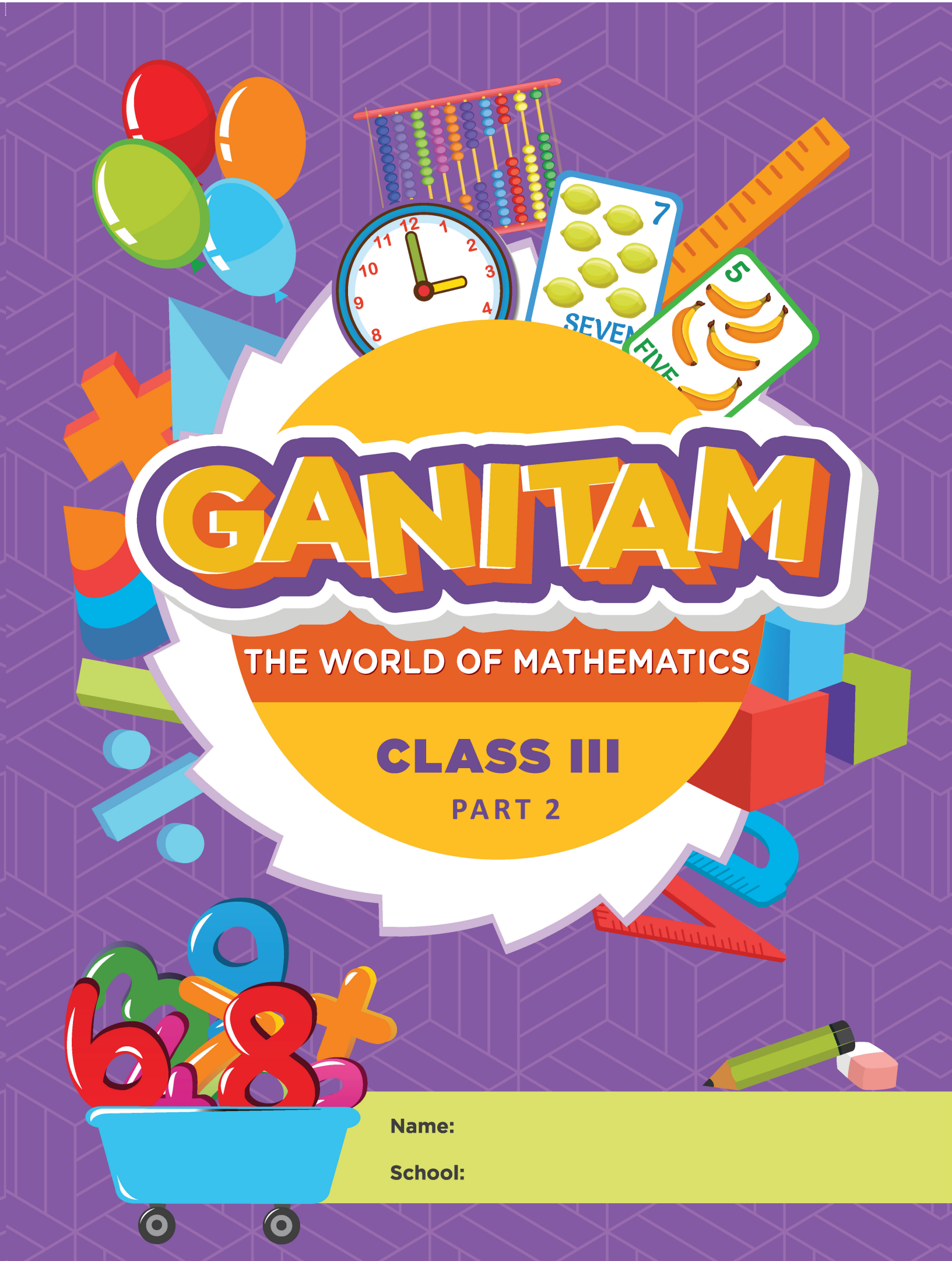
GANITAM
THE WORLD OF MATHEMATICS
CLASS III
PART 2
Name:
School:

Ganitam

The World of Mathematics

PART II

Ganitam

The World of Mathematics

Third Edition published in 2024

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Preface

Ganitam – The World of Mathematics

Mathematics builds hope. It helps us believe that every problem has a solution.

Education imparted in classrooms should be linked to life outside school. Hence the knowledge and skills acquired in school should help children understand the world around them better, and thereby contribute towards its betterment. This series of books on Mathematics titled "Ganitam-The World of Mathematics", has been prepared with that thought on our minds. The book has been designed in such a way that it enhances inquisitiveness in children by encouraging them to ask questions and seek answers rather than just learn what is listed in the books.

The content has been carefully curated, so that it reflects the rich cultural diversity of our motherland Bharat, enabling the child to intuitively understand the unifying values that bond the citizens of this great country together. Thus, the book will help a child gain various skills required for the 21st century and be a universal citizen with a passion for following Indian values.

The core content of the book originates from the Vedas which provide the key concepts of Mathematics. For example, the sutra एकाधिकेन पूर्वेण(Ekaadhikena Purvena) indicates an interesting mathematical application. Great ancient Indian scholars like Acharya Aryabhatta, Brahmagupta, Bhaskaracharya, Pingala, Mahavira, and more contemporary ones like Srinivasa Ramanujan along with their counterparts from other parts of the world, have further developed this body of knowledge. Numerous teachers from the DAV Group of Schools, with their decades of rich experience, have compiled the existing knowledge in a child-friendly form.

Therefore, there is no copyright on the content of this book. One can seek permission and print all or only certain chapters of the book. However, no unauthorized modification is permitted in any chapter. Considering the social orientation of the organization, we have consciously ensured that cost of the textbook is affordable

without compromising on the quality of paper/print. Also, the e-copy of the entire book will always be downloadable for free from our website – davchennai.org/publications.

This is the first version of the book and could contain not only omissions, but also areas of improvement. We request the reader to excuse us for the omissions, but please do bring to our notice any feedback for correction and improvement in subsequent versions. We will remain grateful to you for your support and feedback.

Lastly, before signing off, we would like to express our profound gratitude to God Almighty for the guidance and encouragement in this endeavour. As the great mathematician, Srinivasa Ramanujan, rightly said - **"An equation for me has no meaning unless it expresses a thought of God."**

Chennai | June 2024

Secretary
Tamil Nadu Arya Samaj Edu. Society

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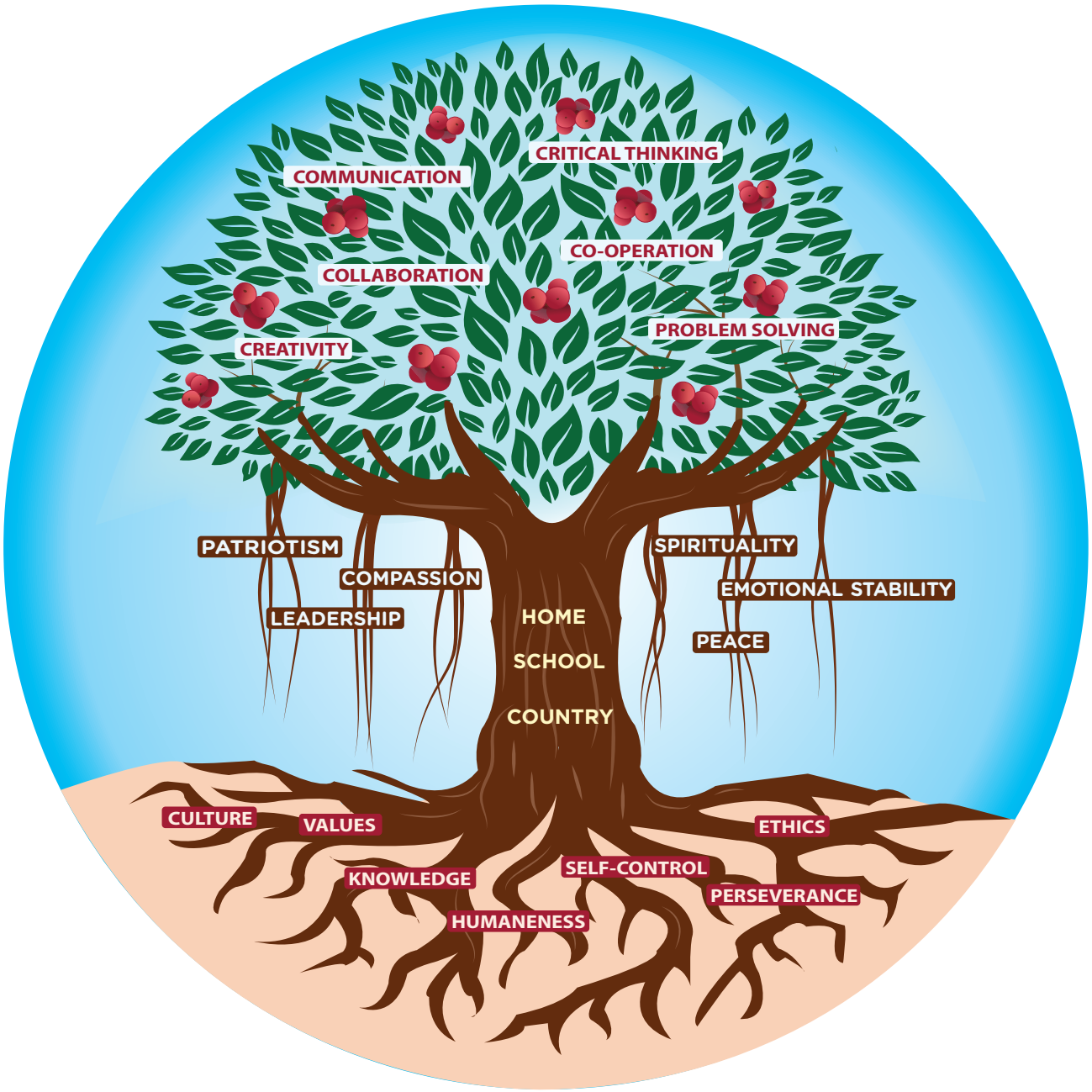
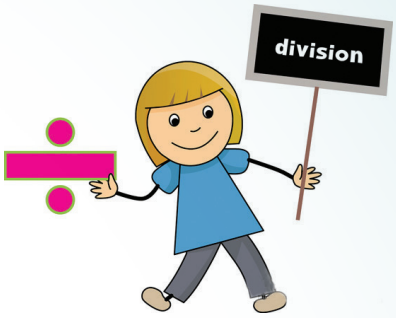
The Learning Tree



DIVISION -II



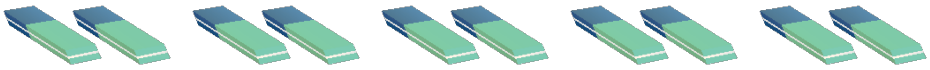
LEARNING OUTCOMES

At the end of this lesson, children will be able to:

- Divide using short and long division method.
- Check division using multiplication.
- Apply the skill of division to solve real-life problems.

Warm up

1) Divide equally and find the number of objects in each groups

a) 

$10 \div 5 =$ ☐ _____ erasers in each group

b) 

$12 \div 6 =$ ☐ _____ dolls in each group

2) Divide into equal groups

a) 

$16 \div 8 =$ ☐ groups

b) 

$9 \div 3 =$ ☐ groups

c) 

14 ÷ 2 = ☐ groups

3) Divide using tables

a) 20 ÷ 2 = _____ (2 x **10** = 20)

b) 48 ÷ 6 = _____

c) 90 ÷ 10 = _____

d) 88 ÷ 11 = _____

e) 54 ÷ 9 = _____

f) 7 ÷ 7 = _____

4) Find the answers using tables

a) How many eights are there in 64? _____

b) How many times three is 27? _____

c) Four nines are in _____

d) _____ tens are in 100

e) How many sevens are in 35? _____

5) Write the division fact and then find the answer

a) 2 students can sit at a desk. How many desks are needed for a class of 20 students?

Division fact : _____ No. of desks needed = _____

b) 32 burfis are equally shared among 4 children.

How many burfis did each get?

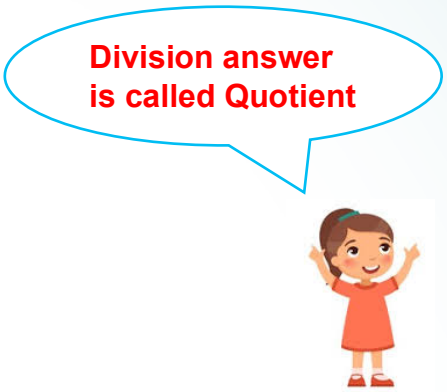
Division fact : _____ No. of burfis got by each = _____

c) 48 books are equally arranged in 8 shelves. How many books will be there in 1 shelf?

Division fact : _____ No. of books in 1 shelf = _____

Concepts Section

Short Division



Example 1

18 pencils are equally divided among 3 students.

We write it as

18 ÷ 3 = **6**

18 - Dividend

6 - Quotient

3 - Divisor

Example 2

Ram divided 40 jelabis equally among 8 children.

40 ÷ 8 = **5**

40 - Dividend

5 - Quotient

8 - Divisor

EXERCISE 7.1

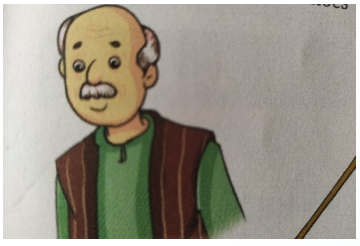
1) Divide by using multiplication tables

a) 18 ÷ 2 = b) 32 ÷ 4 = c) 60 ÷ 10 = d) 42 ÷ 6 =

e) 45 ÷ 5 = f) 15 ÷ 3 = g) 28 ÷ 7 = h) 56 ÷ 8 =

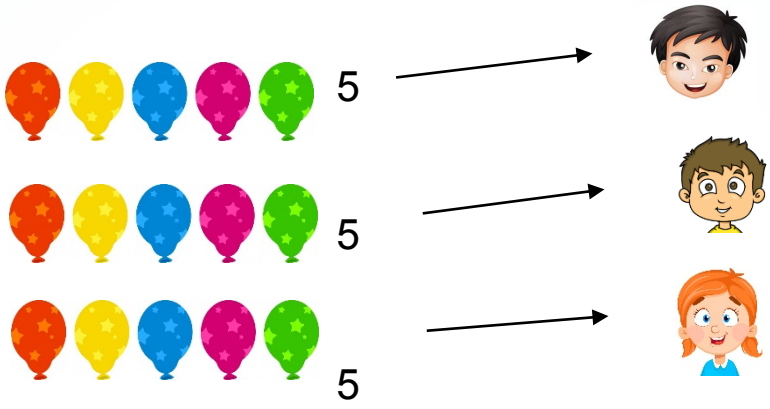
Long division

Arun's grandfather bought 20 balloons for him and 2 of his friends.

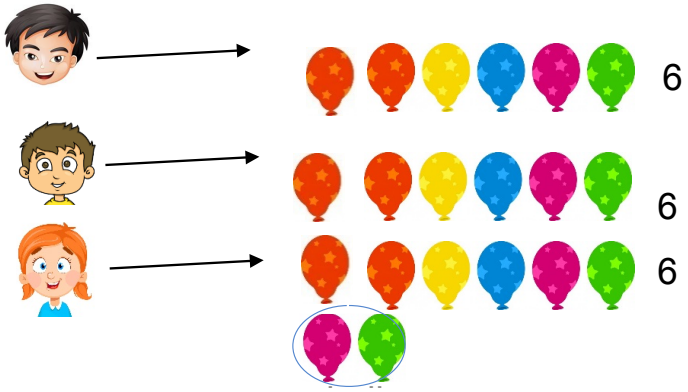


Achachan : Arun, divide 20 balloons equally amongst your friends.

Arun started sharing equally. First he gave 5 balloons to each.



He is left with 5 balloons. Again he gave 1 more to each.



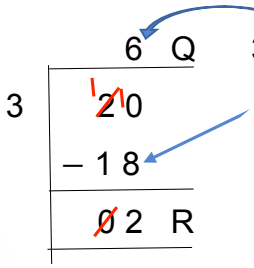
Now, Each got 6 balloons and 2 balloons were left over.

In division, the number of objects left after equal distribution is called remainder.

So, when we divide 20 by 3 we get 6 as the quotient and 2 as the **remainder.**

20 ÷ 3 = 6 and Remainder = 2

long division, we write the above example like this.

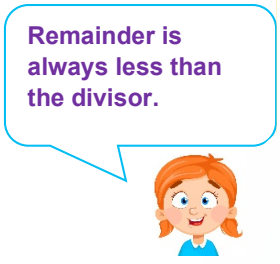


3X6=18.

In 3 tables, 18 is the closest multiple that is less than 20. Write 6

in quotient's place and18 below 20.

20 – 18 = 2. We get 2 as remainder.



Dividend = 20 Quotient = 6

Divisor = 3 Remainder = 2

Division of a 2-digit number by 1-digit number

Example 1 - 87 ÷ 2

```
    43
2 | 87
  - 8
  ---
    07
  - 6
  ---
     1
```

2x4=8

subtract and drop the next digit 7.

2x3=6.Then subtract 7 – 6 =1

Quotient = 43

Remainder = 1

Example 2 - 48 ÷ 4

```
    12
4 | 48
  -4
  ---
    08
  - 8
  ---
     0
```

4x1=4

subtract and drop the next digit 8.

4x2=8.Now subtract 8 – 8 = 0

Quotient= 12

Remainder = 0

Example 3

Divide 79 by 5

```
    15
5 | 79
  - 5
  ---
    29
  - 25
  ---
     04- R
```

Quotient = 1

Step1. First take 7 tens. 5 x**1**= 5 .

Write 1 in quotient place and 5 below 7.

Subtract 5 tens from 7tens. 7 T – 5 T= 2 T

Step 2. Drop the next digit 9. We get 29.

5 x **5** = 25. Write 5 in quotient place and 25 below 29. Now, 29 – 25 =4

Quotient = 15, Remainder = 4

EXERCISE 7.2

I) Divide by long division method and write the quotient and remainder.

a) 36 ÷ 3 b) 84 ÷ 2 c) 49 ÷ 4 d) 55 ÷ 5

e) 56 ÷ 2 f) 73 ÷ 6 g) 78 ÷ 5 h) 86 ÷7

II) Applications in real life

a) 3 people can travel in an auto. How many autos are needed for 54 people to travel?

b) Anu has 65 toffees. She shared them equally between two of her friends. How many toffees did each friend get? How many toffees were left?

c) Usha has 94 beads. She makes 7 necklaces. If she uses the same number of beads for each necklace, how many beads does she use in each necklace and how many beads are left?

d) There are 80 students in class 3. They are divided into teams of 6 each. How many teams will there be and how many students will be left out? How many more students are needed to complete the team using the students left out?

Activity

A rabbit starts jumping from 0.

a) If it covers 3 steps in 1 jump, in how many jumps will it land on 18? _____

b) It reaches 15 in _____ jumps.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

A monkey starts jumping from 0.

c) If it covers 4 steps in 1 jump, it reaches 12 in _____ jumps.

d) Rabbit needs to make _____ jumps and monkey needs to make ___ jumps to meet each other first.

e) How many times will they meet and where?

Ans. _____

Colour all the boxes where the rabbit lands in ORANGE

Colour all the boxes where the monkey lands in GREEN.

Colour the box where both meet in RED.

Higher Order Thinking Skills

Malar takes 5 minutes to jog once around the park. She jogs for 1 hour every day. How many rounds does she complete around the park in a day?

Division of a 3-digit number by a 1-digit number

Example 1 : 137 ÷ 4

```
       3 4- quotient
    ________
4  | 1 3 7
   |- 1 2
   |______
   |   1 7
   | - 1 6
   |______
   |    1- remainder
```

Step 1. As the hundreds digit is smaller than the divisor, take the hundreds and tens 13, which is 13 tens. 4x**3**=12. Write 3 in the quotient's place and 12 below 13.

13 – 12 = 1

Step 2. Drop the next digit 7

We get 17 ones. 4x**4**=16. Write 4 in the quotient's place and 16 below 17.

17 – 16 = 1 - remainder.

Example 2 : 609 ÷ 6

```
      1 0 1- Q
    ________
6  |  6 0 9
   |- 6
   |________
   |  0 0
   | -  0
   |________
   |    0 9
   | -    6
   |________
   |      3 - R
```

Step 1 Take 6 H. 6x**1**=6. Write 1 in the quotient's place and 6 below 6. Now Subtract

6 – 6 =0.

Step 2 Drop the next digit 0.

We have 00. 6x**0**=0. Write 0 in quotient's place.

0 – 0 = 0.

Step 3 Drop the next digit 9.

6x**1**=6. Write 1 in quotient's place and 6 below 9 then subtract. 9 – 6 = 3.

[**Note:** We can avoid step 2 and write 0 directly in quotient's place]

Example 3

9 8 0 ÷ 7

```
     1 4 0
 7 | 9 8 0        7x1=7
   -7
     2 8          7x4=28
    -2 8
     0 0 0        7x0=0
         0
         0
```

[Note : We can put a 0 in the quotient's place directly without doing the third step.]

Quotient = 140
Remainder = 0

Example 4

2 2 8 ÷ 8

```
      2 8
 8 | 2 2 8        8x2=16
   -1 6
       6 8        8x8 =64
   -   6 4
         4
```

Quotient = 28
Remainder = 4

EXERCISE 7.3

I) Divide by long division method

a) 479 ÷ 3 b) 508 ÷ 5 c) 777 ÷ 6 d) 806 ÷ 4

e) 147 ÷ 2 f) 229 ÷ 7 g) 406 ÷ 8 h) 199 ÷ 9

II) Solve the story sums

a) Aruna collected 375 roses. She made bouquets with 8 roses in each bouquet. Find

i) the number of bouquets that she can make

ii) the number of roses that would be left after making the bouquets

b) Ajay and Pinky wanted to surprise their mother on her birthday by giving her a gift. They bought a watch for ₹ 970 with the money they had in their piggy bank. If they both contributed to the gift equally, what is the individual contribution made by Ajay and Pinky?

c) Weight of 4 bags of rice is 672 kg. What is the weight of each bag of rice?

d) Saranya's mother bought a handwriting book of 192 pages. Saranya writes 6 pages of it in a day. In how many days will she complete the book?

e) 950 litres of water are filled equally in 2 water tanks. What is the capacity of each tank?

Checking division

We can verify the division answer by using the formula

Quotient x Divisor + Remainder = Dividend

Example : 93 ÷ 2

```
      4 6 – Q
   ________
2 |  9 3        2X4=8
  | - 8
  |______
     1 3        2X6=12
  | - 1 2
  |______
       1 – R
```

Checking.

```
   4 6   Quotient
 x   2   divisor
 ------
   9 2
 +   1   remainder
 ------
   9 3 = Dividend
```

EXERCISE 7.4

I) Divide and check your answer

a) 81 ÷ 4	b) 99 ÷ 7	c) 57 ÷ 6
d) 970 ÷ 3	e) 808 ÷ 8	f) 138 ÷ 5

Arts Integrated Activity

Take 30 straws.

How many  **can be made without bending or breaking the straws?**

Division by 10,100 and 1000

We can divide a number by 10,100 and 1000 without doing actual division. Observe the given examples.

Examples

a) 345 ÷ 10

34 | 5 ÷ 10 [draw a line after the ones digit]

Quotient = 34, remainder = 5

b) 498 ÷ 100

4 | 98 ÷ 100 [Draw a line after the ones and tens digits]

Quotient = 4, remainder = 98

c) 3092 ÷ 1000

3 | 092÷ 1000 [Draw a line after the ones, tens, and hundreds digits]

Quotient =3 Remainder = 92

EXERCISE 7.5

I) Find the quotient and remainder without actual division

a) 46 ÷ 10 b) 368 ÷ 10 c) 1573 ÷ 10 d) 2845 ÷ 100

e) 194 ÷ 100 f) 7009 ÷ 1000 g) 6606 ÷ 100 h) 4020 ÷ 1000

II) Fill in the box

a) ☐ ÷ 100, quotient = 29 remainder = 62

b) 903 ÷ 10, Quotient = ☐, Remainder = ☐

c) 7102 ÷ ☐, Quotient = 7, Remainder = 102

d) ☐ ÷ 100, Quotient = 4, Remainder = 58

e) 6134 ÷ ☐, Quotient = 613, Remainder = 4

f) ☐ ÷ 1000, Quotient = 3, Remainder = 2

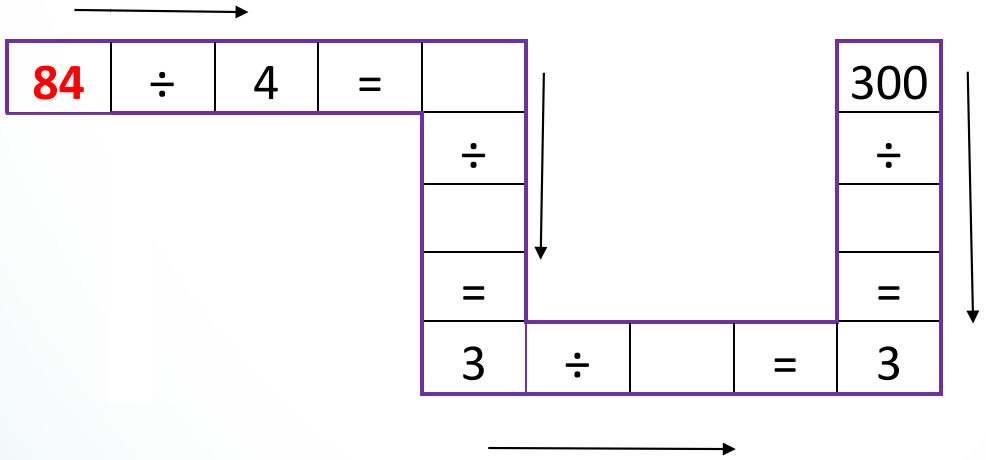
Value Based Question

Pooja made 32 aloo parathas to serve the needy people. But the number of people were more than expected. So, she divided each aloo paratha into two pieces.If she served 9 people with equal number of pieces, how many pieces did each get? How many pieces were left?

Do you help the needy people?

Puzzle

Multiply or divide to find the number in the empty box



WORKSHEET

I) Divide by short division method

a) 96 ÷ 3 b) 62 ÷ 2 c) 66 ÷ 11

d) 99 ÷ 9 e) 80 ÷ 4 f) 100 ÷ 5

II) Divide by long division and check your answer

a) 205 ÷ 4 b) 324 ÷ 6 c) 804 ÷ 8 d) 675 ÷ 3

e) 579 ÷ 2 f) 139 ÷ 7 g) 118 ÷ 5 h) 909 ÷ 9

III) Applications in real life

a) Arun has 169 pencils. He divides them equally among 6 of his friends. He keeps the remaining pencils with him. How many pencils does each friend get? How many pencils does he keep for himself?

b) A multistorey building has equal number of flats in each floor. It has 120 flats in 8 floors. How many flats are there in each floor?

c) A mall was closed for 175 days for renovation. How many weeks was it closed?

d) A sweet shop makes 875 laddus in a day.
They pack 6 laddus in a box. Find
i) How many boxes are needed for a day?
ii) How many laddus will be left everyday?

e) On Republic day, 144 soldiers participated in marchpast with 3 soldiers in each row. How many rows of soldiers marched on that day?

Facts Corner

The Republic day parade has been in practice since 1950, showcasing India's military strength and cultural diversity.

III) Decide the operation and solve

a) How many calories are in 250 g of oil, if 1 g of oil has 9 calories?

b) Maya uses 3 litres of water to water her plants every day.

Find the

i) no. of days that she can water the plants with 21L of water?

c) A car covers a distance of 840 km in 6 hours. Find the distance that the car could have covered in 1 hour?

d) Roshan saves ₹3250 per month and his sister Maya saves ₹1950 per month. Find the total amount saved by them.

e) In Chennai, 5200 tons of garbage is collected in a day by the corporation. If 3970 tons are collected in the morning how many tons are collected in the evening?

Challenge Yourself

I) Use division both horizontally and vertically to fill in the boxes.

24	?	8

84	4	?
6	?	3
?	?	7

96	6	?
4	?	?
?	6	4

100	10	?
?	5	?
20	?	?

?	5	?
8	?	8
?	?	?

FRACTIONS

LEARNING OUTCOMES

At the end of this lesson, children will be able to:

- Identify fraction as part of a whole
- Identify fraction as part of a collection
- Differentiate between a numerator and denominator of a fraction
- Apply the skill of fraction to solve real-life problems

Fractions in real life

Ram and Saran are friends. One day, Ram forgot to bring snacks. Saran's mother had given him boli to have during break time. He shared his boli with his friend. He divided it exactly into two equal parts and gave one part to his friend and took one part for himself. Now, Ram and Saran have 1 part out of 2 equal parts. We write it as $\frac{1}{2}$.

1 Whole

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

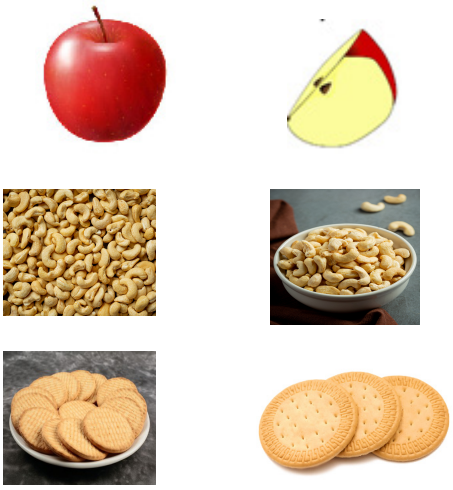
$\frac{1}{2}$ → Number of parts taken

→ Total number of equal parts

Concept Section:

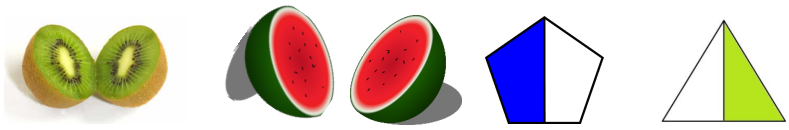
Fraction is part of a whole or collection of objects.

Part of a whole / collection



Half

Observe the following pictures.



Here, the whole is divided into **two equal parts.**

Each part is written as $\frac{1}{2}$.

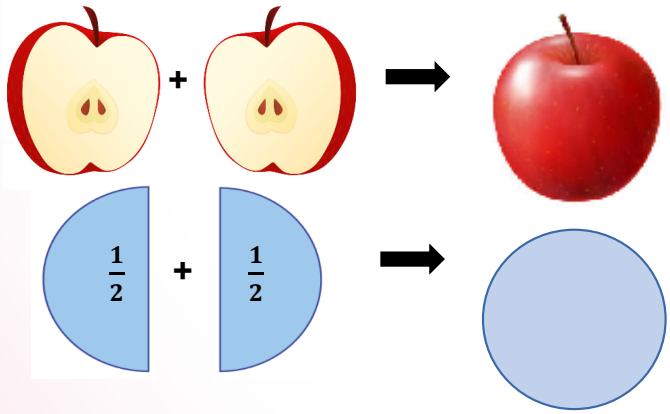
We read it as one divided by 2 or **Half.**

1 → Number of parts taken

2 → Total number of equal parts

When a whole is divided into two equal parts, each part is called a Half.

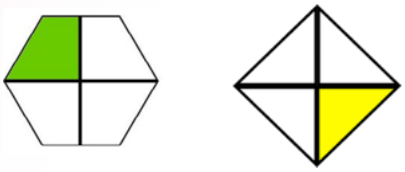
Two halves make a whole.



If we put two halves together, we get a whole.

Quarter

Observe the given pictures.



Here, one whole is divided into 4 equal parts.

Each part is written as $\frac{1}{4}$ or one quarter.

We read it as one divided by 4 or one fourth.

1 ⟶ Number of parts taken

4 ⟶ Total number of equal parts

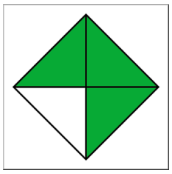
When a whole is divided into 4 equal parts, each part is called as a quarter.

4 one-fourths make a whole.

If we put four quarters together, we get a whole.

Three-quarters

Observe the given pictures



Here, one whole is divided into **4 equal parts.**

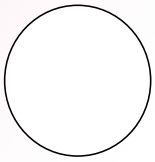
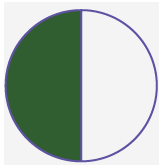
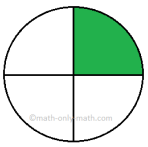
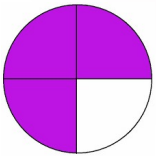
We write it as $\frac{3}{4}$ and read as 3 divided by 4 or Three fourths.

3 ⟶ Number of parts taken

4 ⟶ Total number of equal parts

If we divide a whole into 4 equal parts and if three parts are taken, the part we have taken is called three quarters.

Whole Half Quarter Three-Quarter

$$\text{Fraction} = \frac{\text{(No.of parts referred to)}}{\text{(Total no.of equal parts)}} = \frac{\text{Numerator}}{\text{Denominator}}$$

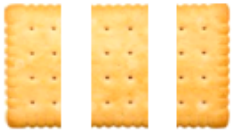
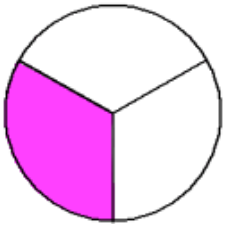
In the fraction $\frac{3}{4}$, 3 is the numerator and 4 is the denominator of the fraction.

$\frac{3}{4}$ — 3 → numerator, 4 → denominator

More fractions

Thirds

Observe the given pictures.

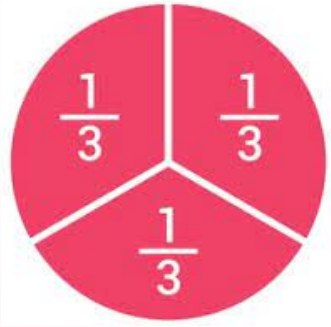




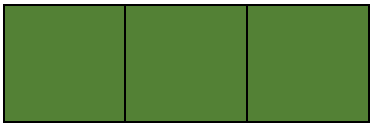

Here, the whole is divided into three equal parts.

Each part is written as $\frac{1}{3}$.

We read it as one divided by 3 or **one-third.**

Three one-thirds make a whole.





Two-thirds

The whole is divided into 3 equal parts.

Out of 3 parts, two parts are shaded. We write the shaded part as 2/3 or **Two-thirds.**

Five-eighths

Look at the given pictures.

In this picture, the whole is divided into 8 equal parts and 5 parts are shaded.

We write it as $\frac{5}{8}$ or five-eighths.

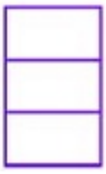
Thinking skills

Amit has taken away a quarter from a whole.

He is left with _____.

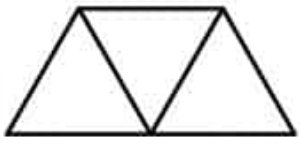
EXERCISE 8.1

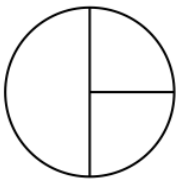
I) Put a tick near the figure which is divided into equal parts and a cross near the figure which is not divided into equal parts.

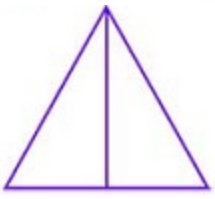
a) 

b) 

c) 

d) 

e) 

f) 

II) Circle the fraction that represents the shaded parts.

a) 

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

b) 

$\frac{3}{5}$ $\frac{3}{8}$ $\frac{5}{8}$

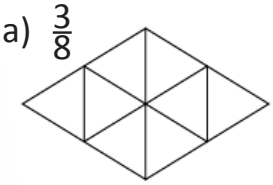
c) 

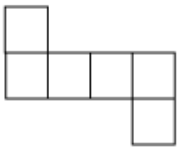
$\frac{2}{5}$ $\frac{2}{3}$ $\frac{3}{5}$

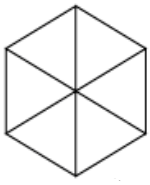
d) 

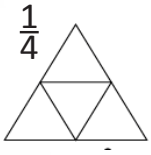
$\frac{4}{6}$ $\frac{6}{10}$ $\frac{4}{10}$

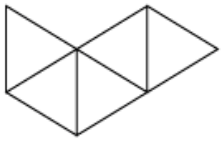
III) Colour the given fractions

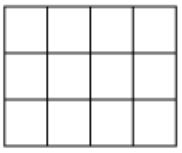
a) $\frac{3}{8}$ 

b) $\frac{2}{6}$ 

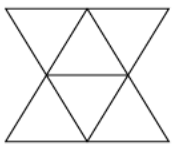
c) $\frac{5}{6}$ 

d) $\frac{1}{4}$ 

e) $\frac{3}{5}$ 

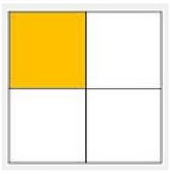
f) $\frac{7}{12}$ 

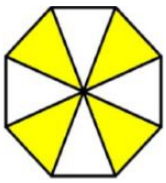
g) $\frac{4}{8}$ 

h) $\frac{2}{6}$ 

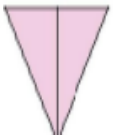
i) $\frac{3}{3}$ 

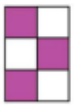
IV) Write the fraction of the shaded parts

a)  ☐

b)  ☐

c)  ☐

d)  ☐

e)  ☐

f)  ☐

V) Write the fraction in words

a) $\frac{2}{3}$ = Two-thirds

b) $\frac{5}{6}$ =

c) $\frac{3}{8}$ =

d) $\frac{1}{5}$ =

e) $\frac{2}{7}$ =

f) $\frac{5}{10}$ =

g) $\frac{4}{7}$ =

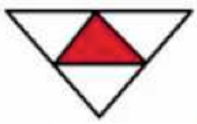
h) $\frac{1}{4}$ =

i) $\frac{6}{9}$ =

j) $\frac{1}{2}$ =

EXERCISE 8.2

I) What fraction is coloured?

a) 

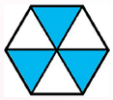
b) 

c) 

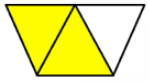
d) 

e) 

f) 

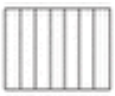
g) 

h) 

i) 

II) Colour to show the given fractions

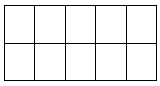
a) $\frac{2}{4}$ 

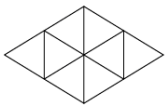
b) $\frac{5}{7}$ 

c) $\frac{2}{2}$ 

d) $\frac{1}{4}$ 

e) $\frac{3}{5}$ 

f) $\frac{7}{10}$ 

g) $\frac{4}{8}$ 

EXERCISE 8.3

I) Write the numerator and denominator of the given fractions

a) $\frac{4}{5}$ Numerator = ☐ Denominator = ☐

b) $\frac{4}{10}$ Denominator = ☐ Numerator = ☐

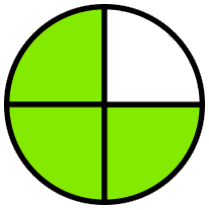
II) Write the fraction

a) Numerator = 4 Denominator = 7 Fraction = ☐

b) Denominator = 6 Numerator = 5 Fraction = ☐

This is $\frac{3}{4}$

Who is correct?



This is $\frac{4}{3}$

III) Write the fraction, numerator and denominator for the unshaded parts of the following

a) 

Fraction ☐

Numerator ☐

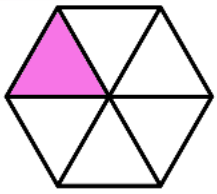
Denominator ☐

b) 

Fraction ☐

Numerator ☐

Denominator ☐

c) 

Fraction ☐

Numerator ☐

Denominator ☐

Fraction of a collection

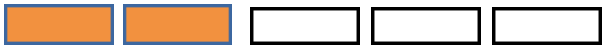
We can also represent the part of a collection or group in fractions.

Example 1

There are 8 apples. Out of that 5 are red and the rest are in green.

Fraction of green apples = $\frac{3}{8}$ → 3 green apples; → 8 total number of apples

Example 2

There are 5 rectangles. 

Only 2 are coloured.

Fraction of coloured parts = $\frac{2}{5}$

Fraction of uncoloured parts = $\frac{3}{5}$

EXERCISE 8.4

I) Write the fraction for shaded and unshaded parts

a) 

Fraction of shaded parts = ☐

Fraction of unshaded parts = ☐

b) 

Fraction of shaded parts = ☐

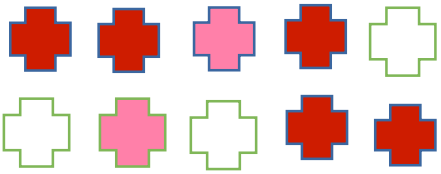
Fraction of unshaded parts = ☐

c) 

Fraction of yellow stars = ☐

Fraction of red stars = ☐

Fraction of green stars = ☐

d) 

Fraction of coloured tiles = ☐

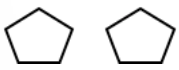
Fraction of uncoloured tiles = ☐

Fraction of red tiles = ☐

Fraction of pink tiles = ☐

II) Colour to show the given fraction

a) $\frac{3}{7}$ 

b) $\frac{1}{2}$ 

c) $\frac{2}{6}$ 

d) $\frac{5}{9}$ 

e) $\frac{7}{11}$

f) $\frac{6}{9}$

Arts Integrated Activity

Draw 10 kites. Colour

- $\frac{2}{10}$ in **green**
- $\frac{4}{10}$ in **pink** and
- $\frac{1}{10}$ in **purple**

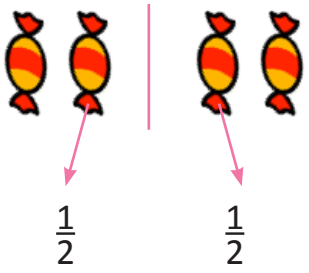
Facts Corner

Makar Sankranti, a festival dedicated to the Sun God is celebrated across India with much fanfare. The tradition of kite flying on Makar Sankranti is being carried out especially in Gujarat and Rajasthan.

Finding the fraction of a collection

Example 1

Rohith has 4 chocolates. He shares them equally with his sister Sana. He divides into two equal parts and gives 1 part i.e. 2 chocolates to his sister.



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

So, half of 4 is 2.

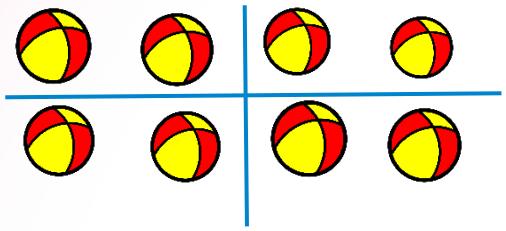
We write it as $\frac{1}{2}$ ***of*** **4= 2**

Example 2

There are 8 balls.

It is divided into four equal groups.

quarter is $\frac{1}{4}$



Each group is a **quarter** of the collection.

8 ÷ 4 = 2. Each group has 2 balls.

So, $\frac{1}{4}$ *of* **8=2**

Example 3

There are 10 dolls.

What is $\frac{1}{5}$ *of* 10 ?

Divide 10 into 5 groups.

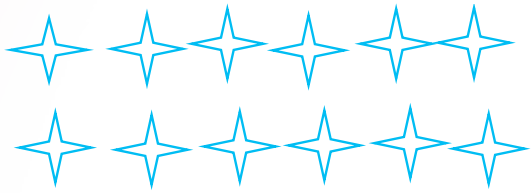
To find this, divide 10 by 5.

10 ÷ 5 = 2. Each group has 2 dolls. So, $\frac{1}{5}$ ***of* 10=2**

EXERCISE 8.5

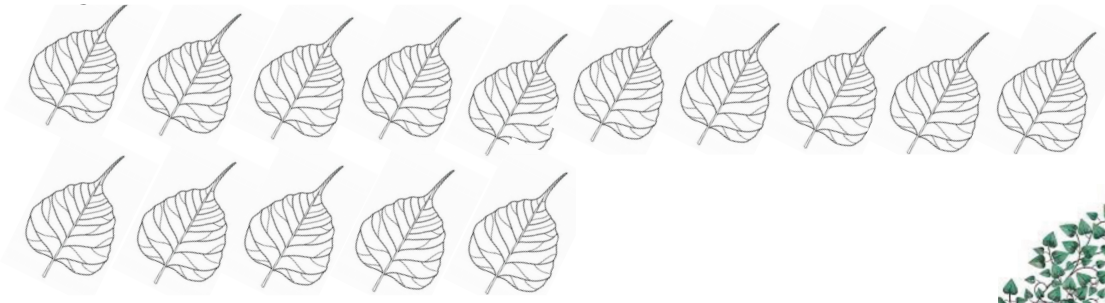
I) Colour for the given fraction

a) $\frac{1}{2}$ ***of* 12**

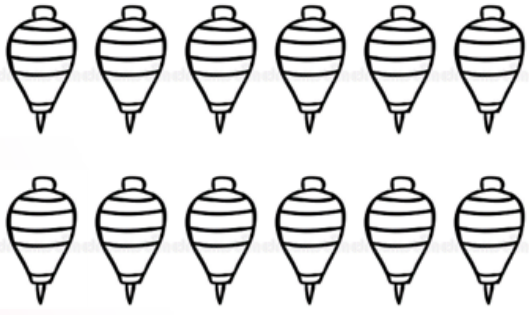


b) $\frac{1}{3}$ ***of* 9**

c) $\frac{1}{5}$ ***of* 15**



d) $\frac{1}{4}$ ***of* 12**

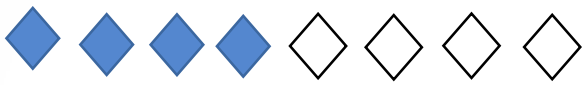


II) Find

a) $\frac{1}{6}$ *of* 30 b) $\frac{1}{5}$ *of* 40 c) $\frac{1}{8}$ *of* 48

d) $\frac{1}{9}$ *of* 72 e) $\frac{1}{3}$ *of* 27 f) $\frac{1}{7}$ *of* 49

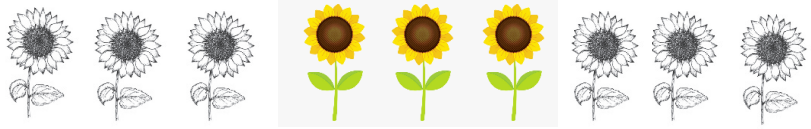
III) What fraction of the collection is coloured?

a) 

Fraction = ☐

Facts Corner

Sunflower needs a lot of sun light and **follows the sun's movements** across the sky from east to west, this phenomenon is called heliotropism.

b) 

Fraction = ☐

c) 

Fraction = ☐

Facts Corner

Fig trees have **no blossom** on their branches. **The blossom is inside of the fruit!** Many tiny flowers produce the crunchy little edible seeds of the fruit which is rich in calcium and fibre.

Applications in real life

1) Megna's mother gifted her a drawing book on her birthday. Out of 15 pages, she has completed colouring 9 pages.

a) Fraction of pages coloured = ☐

b) Fraction of pages yet to be coloured = ☐

2) There are 20 roses in a bouquet. Out of that 12 are yellow and the rest are pink.

a) Fraction of yellow roses = ☐

b) Fraction of pink roses = ☐

3) Mahitha has 24 marbles. She gave one third to her brother and kept the remaining with her.

a) How many marbles did she give her brother?

b) What fraction of the marbles did she keep with her?

4) There are 14 boys and 12 girls in a class.

What fraction of the class is a) boys?

b) girls?

Higher Order Thinking Skills

Find

a) Half of a dozen mangoes

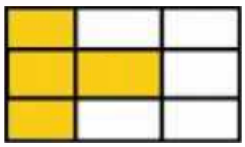
b) Quarter of an hour

c) Three quarters of 12 jamuns

d) Half of 42 metres of cloth

WORKSHEET

I) Write the fraction of the shaded parts

a) 

b) 

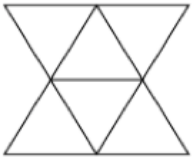
c) 

d) 

e) 

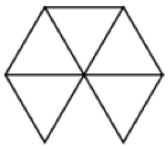
f) 

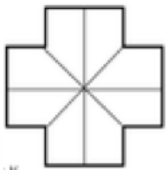
II) Colour to show the given fractions

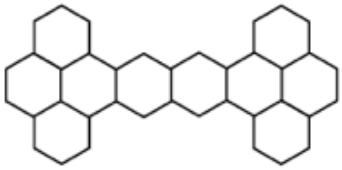
a) $\frac{4}{6}$ 

b) $\frac{3}{5}$ 

c) $\frac{5}{8}$ 

d) $\frac{2}{5}$ 

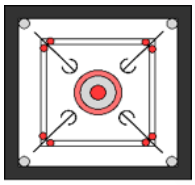
e) $\frac{3}{8}$ 

f) $\frac{7}{10}$ 

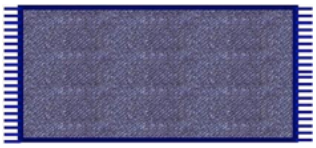
III) Can you divide each of the pictures into two equal parts? Write YES/NO

a) 

b) 

c) 

d) 

e) 

f) 

IV) Find the following

a) $\frac{1}{2}$ of 24

b) $\frac{1}{4}$ of 32

c) $\frac{1}{8}$ of 80

d) $\frac{1}{4}$ of a dozen

e) Half of 100 rupees

V) Match the shaded parts with the fractions

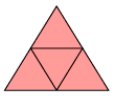
a) $\frac{1}{4}$

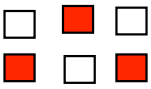
b) $\frac{4}{8}$

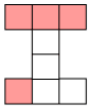
c) 1 whole

d) $\frac{3}{6}$

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







VI) Applications in real life

a) Amirta has 5 red marbles, 3 green marbles and 2 yellow marbles. What fraction of the marbles is green?

b) Students of class 3 were taken for an excursion. Out of 40 students, 30 were boys and the rest were girls. Find the fraction of students who were girls.

c) Varshini runs 1000 metres everyday. But she runs only half the distance on Sundays. Find the distance covered by her on Sundays.

d) Ajay's mother gave him 20 peanut candies. He shares quarter of that with his brother and kept the rest for himself. Find the fraction of the candies left for himself.

Higher Order Thinking Skills

Aruna prepared 24 dhoklas. She distributed half of the dhoklas to her friends. Of the remaining dhoklas she shared one third with her father. What is the fraction of dhoklas left with her?

Value Based Question

Rohan has 1 bread slice. How will he share amongst 4 puppies equally? What is the fraction of bread slice got by each puppy? [Do you feed animals and birds? We must give food to animals and birds.]

Dhaan Utsav – Joy of Giving

The simple acts of kindness are by far more powerful than a thousand heads bowing in prayer. Dhaan Utsav is celebrated between 2nd October and 8th October every year to experience the Joy of Giving.

Arts Integrated Activity

Draw and colour to show the given fractions

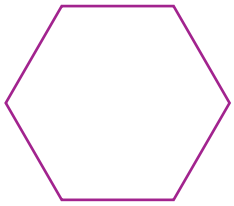
a) $\frac{2}{5}$ b) $\frac{4}{7}$ c) $\frac{3}{4}$

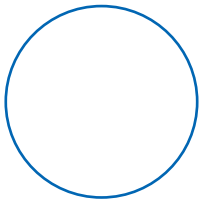
d) $\frac{4}{4}$ e) Two-thirds f) one-quarter

Lab Activity

A. Draw line/lines and colour to show the given fractions.

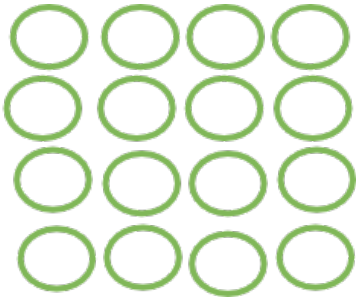
a) Half b) Quarter c) Three-quarters





B. Colour

i) Half of the collection



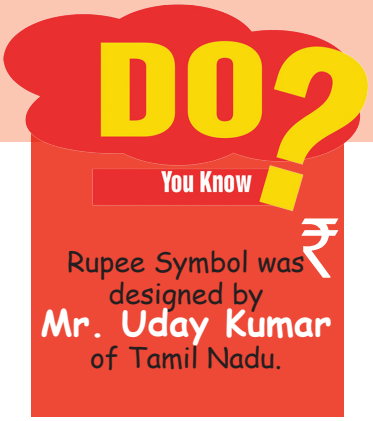
ii) One Quarter of the collection

MONEY

LEARNING OUTCOMES

At the end of this lesson, children will be able to:

- Express money in words and figures
- Convert rupees into paise and vice-versa
- Add and subtract money
- Solve real-life problems
- Understand and prepare a bill



Warm up

We need money to buy things.

Indian currency is Rupee and Paise.

1 rupee = 100 paise

We use the symbol ₹ for rupee and P for paise.

Money in real life

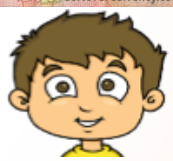
Ajay wants to buy a notebook that costs ₹ 55.

His father gave him two twenty rupee notes and two ten rupee notes.

Can he buy the notebook?

Will he get a change from the shopkeeper?

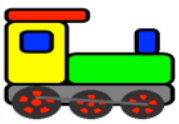
If yes, how much?



Indian currency notes and coins in use now

EXERCISE 9.1

I) Draw the notes and coins needed to buy the following

	Object	Cost
a)		₹ 21
b)		₹ 16
c)		₹ 125
d)		₹ 150
e)		₹ 41

II) Add to find the amount

a) ₹ 10 ₹ 5 = ₹ _____

b) ₹ 20 ₹ 10 ₹ 10 = ₹ _____

c) ₹ 50 ₹ 50 ₹ 1 ₹ 1 = ₹ _____

d) ₹ 100 ₹ 10 ₹ 5 ₹ 2 = ₹ _____

Do you know these coins?

1 rupee =
- Ten coins of 10 paise
- Five coins of 20 paise
- four coins of 25 paise
- Two coins of 50 paise

100 paise =1 rupee

Thinking Skills

How many 50 paise coins will make ₹ 9?

How many 25 paise coins will make ₹ 7?

Concepts Section

Let us learn how to write the rupees and paise in words and figures.

Example 1 ₹ 20 50p

We write this amount as ₹ 20 . 50

Rupees Paise

The dot separates the rupees and paise

We write the rupee symbol in the left and we don't write paise on the right.

In words we write it as **Rupees twenty and fifty paise.**

Example 2

Leno has a 200 rupee note and a fifty paise coin.

How did she write in figures?

₹ 200 50p = ₹ 200.50 (in figures)

Rupees two hundred and fifty paise (in words)

Example 3

50p If we have only a 50 paise coin, we write it as

₹ 0.50 (in figures)

Fifty paise (in words)

EXERCISE 9.2

I) Write in words

a) ₹ 125.50

b) ₹ 200.00

c) ₹ 2300.50

d) ₹ 785

e) ₹ 1230.50

II) Write in figures

a) Rupees two hundred and fifty paise = _____

b) Rupees five hundred fifteen = _____

c) five paise = _____

d) Rupees five and fifty paise = _____

e) Rupees one thousand fifty

f) Rupees nine hundred five and fifty paise =_____

III) Add and write in figures

a) ₹ 50 ₹ 20 ₹ 10 50 p = _____

b) ₹ 100 ₹ 100 ₹ 5 50 p = _____

c) ₹ 10 ₹ 5 50 p 50 p 50 p = _____

d) ₹ 500 ₹ 500 ₹ 5 ₹ 2 50 p = _____

Who is correct?

Pooja bought a bag for ₹ 100 and her brother

Varun bought a puzzle book for ₹ 100.

Pooja gave five 20 rupee notes and

Varun gave ten 10 rupee notes to the shopkeeper.

We can give the same amount in different denominations.

Example

₹ 350 can be given in different ways.

₹ 350 = ₹ 200 ₹ 100 ₹ 50

₹ 350 = ₹ 100 ₹ 100 ₹ 100 ₹ 50

₹ 350 = ₹ 100 ₹ 100 ₹ 50 ₹ 50 ₹ 50

EXERCISE 9.3

I) Give the amount in two different ways

a) ₹ 60 = ☐ ☐ ☐

= ☐ ☐

b) ₹ 520 = ☐ ☐

= ☐ ☐ ☐ ☐

c) ₹ 700 = ☐ ☐ ☐ ☐ ☐

☐ ☐ ☐ ☐

Higher Order Thinking Skills

Surya has 4 notes worth ₹ 230. His friend Manasa has the same amount. But she has 7 notes. Draw the currency notes that Surya and Manasa, might have.

Conversion

Example 1. Covert ₹ 7 into paise

We know that ₹ 1 = 100 paise

Therefore ₹ 7 = 7 x 100 p =700 paise.

To convert rupees into paise, **multiply by 100**

Example 2. Convert ₹ 12.50 into paise.

₹ 12.50 = 1250 p

Covert ₹ 12 into paise

12 x 100 = 1200 p

Now add the 50 p to it, 1200 + 50 = 1250.

We can also do it by removing the dot to convert into paise.

Example 3. Convert into rupees and paise.

500 paise = ₹ (500 ÷ 100) = ₹ 5.00

150 paise = ₹ (150 ÷ 100)= ₹ 1.50

To convert paise into rupees and paise, divide paise by 100. Or Simply count two numbers from the right and put a dot.

EXERCISE 9.4

I) Convert into paise.

a) ₹ 16.50 =____p

b) ₹ 37.50 = ____p

c) ₹ 10 = _____p

d) ₹ 250.50 = _____p

e) ₹ 74 = _____p

f) 9 rupees and 50 paise =_____ p

II) Convert into rupees and paise.

a) 400 p =

b) 2000 p =

c) 1250 p =

d) 4850 p =

e) 2600 p =

Addition of money in real life.

Radha invited her friends for her birthday.

Her friends planned to buy gifts for her birthday. They visited a nearby shop and bought the following items.

Aswin	Mona	Roshini
₹ 50	₹ 50	₹ 100
₹ 10	₹ 20	₹ 5
₹ 5	₹ 10	



Amount spent by Aswin = ₹ _____

Amount spent by Mona = ₹ _____

Amount spent by Roshini = ₹ _____

Example 1

Charan bought a cricket bat for ₹ 750 and a ball for ₹ 165. Find the amount to be paid by him.

Price of the cricket bat	=	₹ 7 5 0
Price of the ball	= +	₹ 1 6 5
Total amount	=	₹ 9 1 5

Ans : He has to pay ₹ 915.

★ When we buy two or more items, we have to add to find the total amount.

EXERCISE 9.5

I) Add

a) ₹ 9 8
+ ₹ 7 5
_____

b) ₹ 2 8 4
+ ₹ 7 9
_____

c) ₹ 6 0 7 8
+ ₹ 2 5 8 6
_____

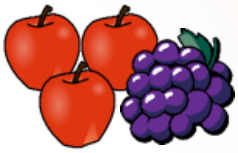
d) ₹ 807 + ₹ 95

e) ₹ 420 + ₹ 836

f) ₹ 909 + ₹ 1764

II) Applications in real life

a) Thara has ₹ 270 in her savings bank. On her birthday, her mother gave her ₹ 50 and father gave her ₹ 80.
Find the total amount in her savings.



b) Karan bought apples for ₹ 215 and grapes for ₹ 135.
How much money did he pay the vendor?

c) Arun bought a pen for ₹140, pencils for ₹ 35 and an eraser for ₹ 8. How much did he spend on stationery?

Subtraction of money in real life

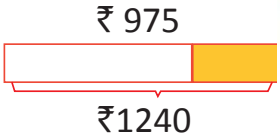
Example 1

Dheeraj has ₹ 500 with him. He buys a mobile phone cover for ₹ 72.Find the amount left with him?

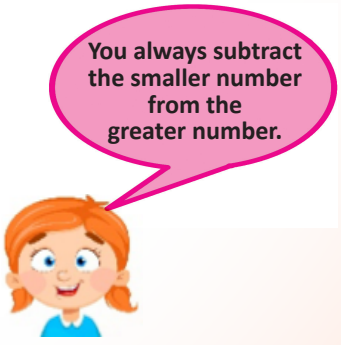
		4 9
Amount with Dheeraj	=	₹ 5 0 0
Price of mobile phone cover	=	− ₹ 7 2
Amount left with him	=	₹ 4 2 8

Example 2

Aruna wants to buy a hand bag. She has ₹ 975 with her.
The cost of the bag is ₹ 1240. How much more money does she need to buy the bag?



		0 1 3
Price of the bag	=	₹ 1 2 4 0
Amount with her	= −	₹ 9 7 5
	=	₹ 2 6 5



She needs ₹ 265 more to buy the bag.

EXERCISE 9.6

I) Subtract

a) ₹ 8 0
– ₹ 2 9
_____

b) ₹ 3 0 4
– ₹ 1 8 7
_____

c) ₹ 1 0 0 0
– ₹ 2 7 6
_____

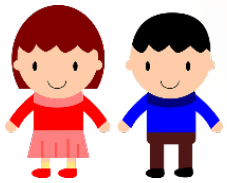
d) ₹ 2 0 3 0
– ₹ 1 4 5 8
_____

e) ₹ 500 – ₹ 97

f) ₹ 420 – ₹ 175

g) ₹ 6301 – ₹ 4829

II) Applications in real life



a) Seema donated ₹ 5000 to an orphanage. Her brother Amith donated ₹ 4815. Who donated more, by how much?

b) Vijay bought a story book for ₹ 418. He gave ₹ 500 to the shopkeeper. How much money should he get back from him?

c) Arun visited an exhibition. He bought a hand crafted flower vase for ₹ 920. But the actual price of it was ₹ 1200. What is the difference in price? How much money did he save, because he bought it in the sale?

Creative skills

2) Kiran has ₹ 75. Priya has ₹ 92.
Make your own story sum.

III) Solve

a) ₹ 83 + ₹ 75 – ₹ 9

b) ₹ 500 – ₹195 – ₹ 75

c) Sandhya had a ₹ 500 note and a ₹ 200 note in her purse.
She bought a dress for ₹ 620.
Find the amount that would be left with her now.

d) Megna went to a medical shop to buy a soap for ₹ 63 and a hand sanitizer for ₹ 89. She gave ₹ 200 to the shopkeeper.
How much money should she get back?

Value based Activity

1) Devi and Anitha donated ₹ 5000 for the Government COVID relief fund. If Devi's contribution was ₹2375, find out the amount donated by Anitha.

Draw the notes and coins for the amount donated.

Rate chart and Bill

We have seen a rate chart in shops and restaurants. It shows the price of each item available in the shop.

To find the amount to be paid for purchased items, we multiply the rate of the item with the quantity we buy.

Amount = Rate x Quantity

Bill is given by the shopkeeper to the customer for the Items purchased in the shop. The bill has the name of the shop, date of purchase, rate, quantity and the amount to be paid.

Example

Darshan visited a vegetable shop. He checked the price list and purchased the following items.

Rate is cost of 1 item

potato 2 kg; onion 1 kg; carrot 3 kg and beans 4 kg. After the purchase, he got a bill for ₹ 464.

S no.	Items bought	Rate	Quantity	Amount
1	Potato	₹ 45	2 kg	₹ 90
2	Onion	₹ 30	1 kg	₹ 30
3	Carrot	₹ 64	3 kg	₹ 192
4	beans	₹ 38	4 kg	₹ 152

Total amount to be paid = ₹ 464

He paid ₹ 464 for the items he purchased

Rate x Quantity = Amount

Preparing a bill

Example

Naveen bought the following items from a stationery shop. Let us prepare a bill for the given items.

2 water bottles at ₹ 120 each

1 pencil box at ₹ 90

3 note books at ₹ 45 each

3 rulers at ₹ 12 each

S no.	Items bought	Rate	Quantity	Amount
1	Water bottles	₹ 120	2	₹ 240
2	Pencil box	₹ 90	1	₹ 90
3	Note books	₹ 45	3	₹ 135
4	Rulers	₹ 12	3	₹ 36

Total amount to be paid = ₹ 501

Rate x Quantity = Amount

EXERCISE 9.7

1) Prepare a bill and find the total amount to be paid for the given items.

2 kg apples at ₹ 145 per kg

a water melon at ₹ 38

4 kg guava at ₹ 26 per kg

S no	Items bought	Rate	Quantity	Amount
1	apples	₹ 145	2	
2	watermelon	₹ 38	1	
3	guava	₹ 26	4	

2) Janani purchased the following items from a textile shop.

Prepare a bill to find the total amount to be paid by her.

2 Sarees for ₹ 500 each

3 Shirts for ₹ 240 each

a Hand bag for ₹ 275

S No.	Items bought	Quantity	Rate	Amount
1				
2				
3				

Total amount paid by Janani = ₹ _____.

3) Sangeeth visited a restaurant with his family.
He ordered the following items. Prepare a bill and find the total amount to be paid.

5 idlis at ₹ 8 each.

2 aloo parathas at ₹ 75 each.

4 dosas at ₹ 60 each.

6 pooris at ₹ 18 each.

S no.	Items bought	Quantity	Rate	Amount
1	Idli	5	₹ 8	
2	Dosa	4	₹ 60	
3	Aloo Paratha	2	₹ 75	
4	Poori	6	₹ 18	

Total amount paid by Sangeeth = ₹ _____.

Social skills

a) Find the currency used in our neighbouring countries.

b) How do you identify a original currency from its duplicate?

c) Where are our coins and notes made?

d) Name the monuments seen in ₹ 50 note and ₹ 200 note.

e) Which Indian currency has the motif of Mangalyan?

WORKSHEET

I) Fill in the blanks, with how many

a) ₹ 1 = _____ 50p coins

b) ₹ 5 = _____ one rupee coins

c) ₹ 30 = _____ 5 rupee coins

d) ₹ 100 = _____ 10 rupee coins

II) Draw the notes and coins for the given amount

a) ₹ 93.50

b) ₹ 140

c) ₹ 74.50

d) ₹ 316

e) ₹ 1604

III) Add to find the amount

a)    = ₹_____

b)  = ₹_____

c)  =₹_____

d)   = ₹_____

e)   = ₹_____

IV) Convert into paise

a) ₹ 9 = b) ₹ 15 = c) ₹ 98.50 = d) ₹ 48.50 =

V) Convert into rupees and paise

a) 400 p = b) 750 p = c) 3200 p =

d) 1850 p = e) 5050 p = d) 4000p =

VI) Write in figures

a) Rupees fourteen and fifty paise = _____

b) Rupees one hundred and fifty paise = _____

c) twenty five paise = _____

d) ten paise = _____

e) Rupees three hundred = _____

VII) Write in words

a) ₹ 36.50

b) ₹ 990.50

c) ₹ 1004.00

d) ₹ 2200

e) ₹ 0.50

VIII) Add

a) ₹ 79 + ₹ 26 b) ₹ 147 + ₹ 98 c) ₹ 263 + ₹ 137

d) ₹ 48 + ₹ 514

IX) Solve

a) ₹ 100 - ₹ 43 b) ₹ 310 - ₹ 269 c) ₹ 2000 - ₹ 894

d) Subtract ₹ 74 from ₹ 200 e) Subtract ₹ 106 from ₹ 1000

X) Applications in real life

a) Barath's father earns ₹ 3850 and his mother earns ₹ 4100 per month. Their monthly expenditure is ₹ 6920.

How much money do they save every month?

b) Mahitha gives ₹ 1000 to the shopkeeper to buy a mat. If the shopkeeper returns ₹ 375, what was the price of the mat?

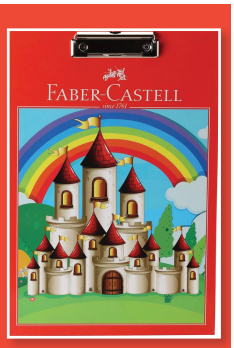
c) Aravind bought a refrigerator for ₹ 8690. He then bought a stand for ₹ 435. Find the amount spent by him.

d) Rama bought 2 hair clips for ₹ 45 each. How much did she spend?

Thinking Skills

Arun wants to buy 2 exam pads, one for his sister and one for himself. The price of an exam pad is ₹ 165. He has ₹ 500 in his savings. Can he buy the items?

If yes, find the amount (a) that he would spend on them
(b) that would be left with him after buying them



Activity

1) Lavanya went to Ooty for summer vacation. They visited a fair there. There were different rides each with different fares.

Boat ride

Cycle ride

Horse ride

Giant wheel

Help Lavanya to pay the amount for her rides.

i) boat ride and giant wheel


+


ii) cycle ride and horse ride

iii) She has ₹ 100. Help her choose the maximum number of rides with that amount


+


2) Four friends visited a mall to buy some items.

Look at the price tag of each item and answer the following.


₹ 62


₹ 189


₹ 15


₹ 7


₹ 212


₹ 36

i) Janani bought a pot and a tumbler.

How much did she pay?


+


ii) Naveen wanted to buy a purse and a pen for his mother.

He has ₹ 200 with him.

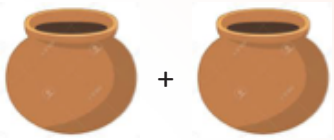
Does he have enough money to buy them? **Yes** / **No**

If Yes, would he have a balance? How much?

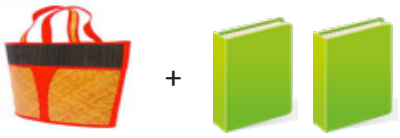
If No, how much more money does he need to buy them?


+


iii) Pooja bought 2 pots. How much did she pay?



iv) If Rahul bought a hand bag and 2 notebooks, how much did he pay?



Experiential Learning

A. Have your own shop

Teacher divides the students into 5 groups.

Each group will create a shop in the classroom with

4 different items with a price tag on each item. Each group visits the other shops and purchases items.

They prepare a bill and find the amount to be paid

for the purchased items.

Finally, the students will show the bill to the teacher.

B. Three friends visited an ice cream shop. Find the total amount paid for the ice creams purchased by them using the rate chart displayed in the shop.

Vanilla	₹ 40
Strawberry	₹ 38
Mango	₹ 42
Pista	₹ 50
Chocolate	₹ 58

1) Madhumitha bought 2 pista, 2 mango and 1 chocolate ice creams.

S No	Items bought	Quantity	Rate	Amount

Total amount paid = ₹ _____

2) Roshan bought 2 vanilla, 2 mango, 1 chocolate and 1 strawberry ice creams.

Total amount paid = ₹ _____

If Roshan has ₹ 200, can he buy the items? If no, how much more money is needed?

TIME

Learning Objectives

At the end of this lesson, children will be able to:

- Read the time to the nearest 5 minutes.
- Write the time with a.m. or p.m.
- Correlate time in real life.
- Know to read the calendar.

Warm up

Vibhav and Varshini love their Nana (Grandfather in Hindi) and Nani (Grandmother in Hindi) very much. They were eagerly waiting for their arrival.

Varshini: Grandparents will reach the Central railway station by tomorrow morning.

Vibhav: Oh! That's great. So, we must be there to receive them an hour before they reach. Right didi?

Varshini: Papa said that they might reach around 8 O'clock in the morning. We must be there at 7 O'clock.

Vibhav: I am eagerly waiting to meet them and spend time listening to stories, playing native games, etc.

Varshini: I especially love Nani's traditional food varieties. Yummy!

Vibhav: Now we shall go to bed, so that we can wake up at 5 O'clock in the morning to pick them up. Good Night didi.

Concept Section

- A clock helps us to know the time.
- A clock has two hands. Some clocks have three hands.
- The long hand tells us the time in minutes. Hence it is called the **minute hand.**
- The short hand tells us the time in hours. Hence it is called the **hour hand.**
- Clock also has number 1 to 12 written on its face.
- The hour hand takes 1 hour to go from one number to the next and 12 hours to complete 1 round.
- The minute hand takes 5 minutes to go from one number to the next and 1 hour or 60 minutes to complete 1 round.

Warm up

I) Pooja's daily activities are given here. Read the clock and match the time.

Gets up from bed

8.00

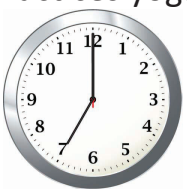
Eats breakfast

8.30

Goes to school

7.00

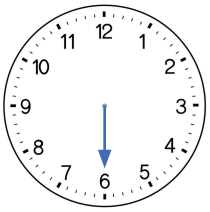
Practices yoga



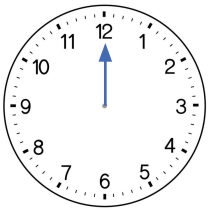
6.00

II) Draw the missing hands of the clock, to match the time given below it.

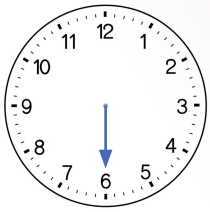
2:00



4:30

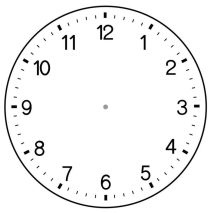


12 O'clock

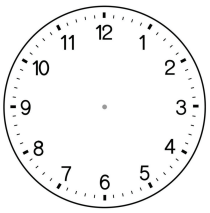


Half past 10

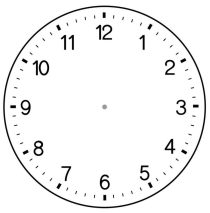
III) Draw the hands of the clock for the given time.



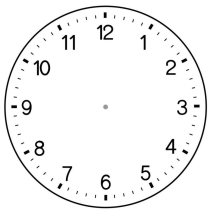
Half past 9



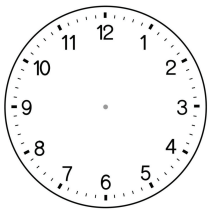
11:30



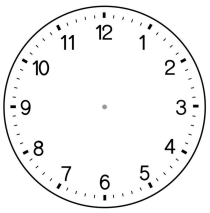
Half past 1



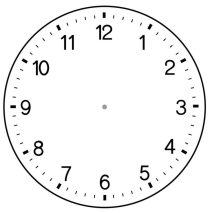
5:00



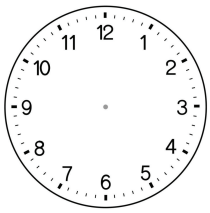
Quarter past 9



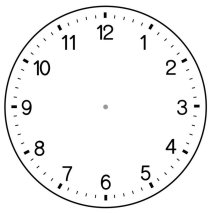
Half past 3



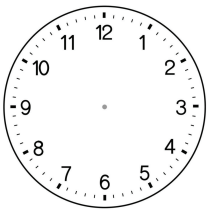
12 O'clock



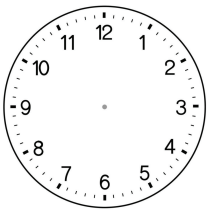
4:15



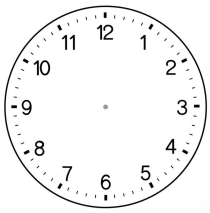
6:30



8 O'clock



Quarter past 2



11:00

IV) Fill in the blanks.

a) 1 hour = _____minutes.

b) 1 day = _____ hours.

c) 1 week = _____days.

d) 1 year = _____ months

e) There are _____ days in May.

f) Wednesday comes after _____.

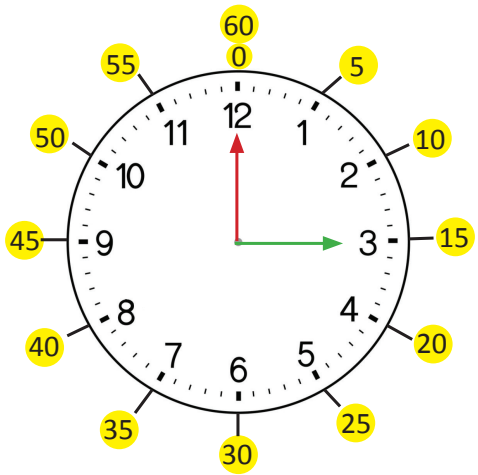
g) Two consecutive months with 31 days in a year are_____ and _____

h) Children's day is celebrated on _____.

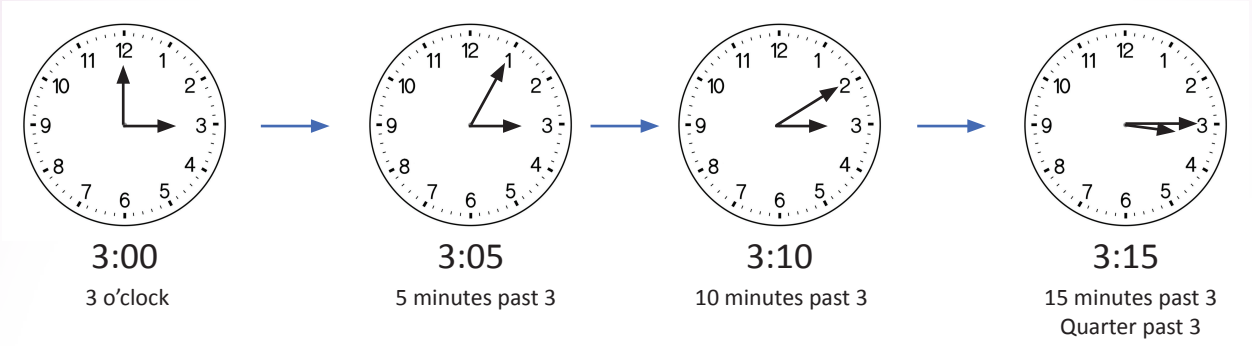
Reading time to the nearest 5 minutes

- The minute hand takes 5 minutes to go from one number to the next and 1 hour or 60 minutes to complete 1 round.
- The minute hand moves through 60 small divisions to complete one round and each division is equal to 1 minute.

We can read minutes by counting in fives.



Observe the below pictures showing the time intervals in count of fives from 3 O'clock to 4 O'clock.

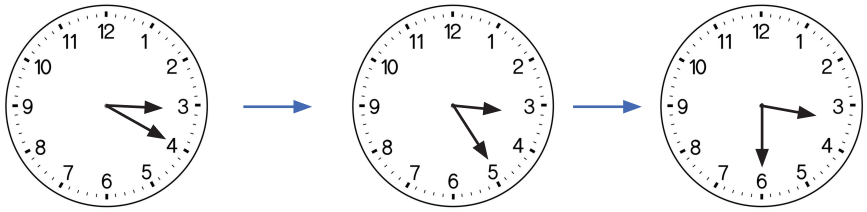


3:00
3 o'clock

3:05
5 minutes past 3

3:10
10 minutes past 3

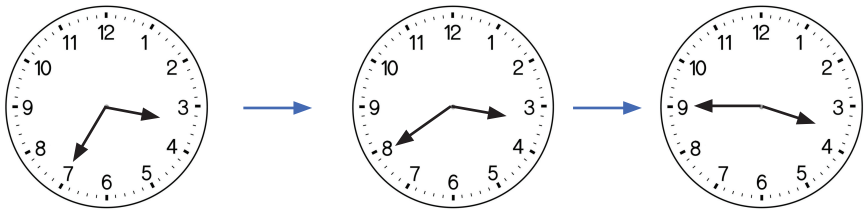
3:15
15 minutes past 3
Quarter past 3



3:20
20 minutes past 3

3:25
25 minutes past 3

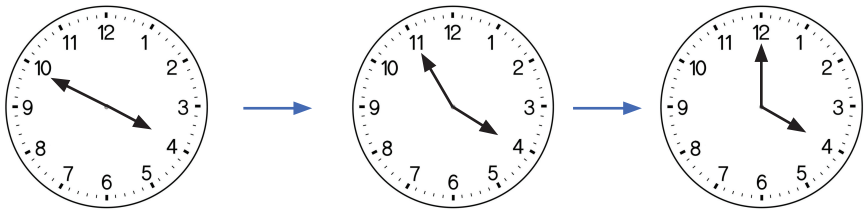
3:30
30 minutes past 3
Half past 3



3:35
35 minutes past 3

3:40
40 minutes past 3

3:45
45 minutes past 3
Quarter to 4



3:50
50 minutes past 3

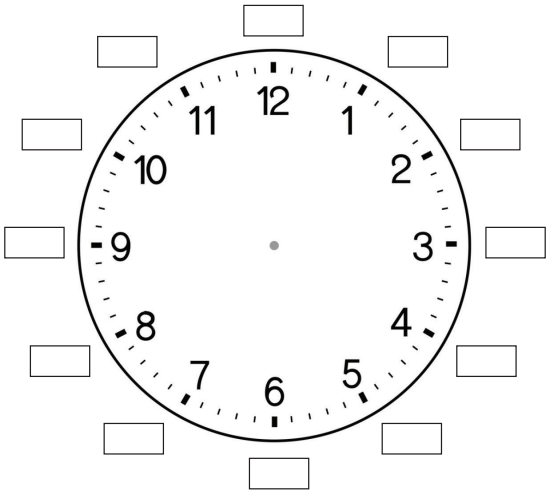
3:55
55 minutes past 3

4:00
4 o'clock

Thinking skills

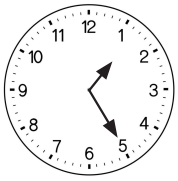
★ Which of the two hands of the clock completes one round first?

Fill in the boxes with the minutes, that the number shows



Writing the time in 2 ways

Example 1.



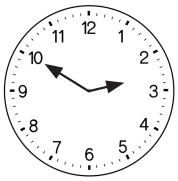
The hour hand is between 1 and 2

The minute hand points at 5 (5x5=25minutes).

The time is **1:25**

25 minutes past 1

Example 2.

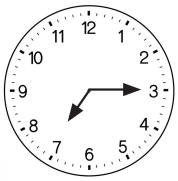


The time is

2 : 50

50 minutes past 2

Example 3.



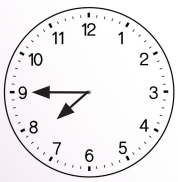
The hour hand is just after 7.

The minute hand points at 3 (3x5=15minutes).

The time is **7:15**

15 minutes past 7 or Quarter past 7

Example 4.



The hour hand is just before 8.

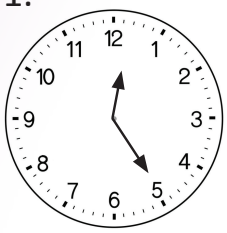
The minute hand points at 9 (9x5=45minutes).

The time is **7:45**

45 minutes past 7 or Quarter to 8

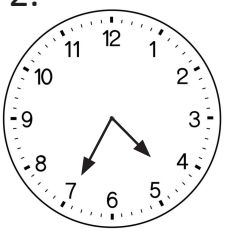
EXERCISE 10.1

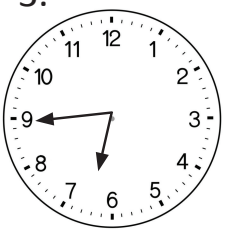
I. Write the time shown on the clock in two ways.

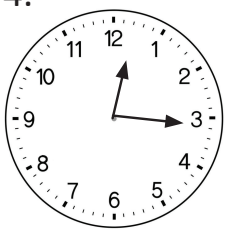
1. 

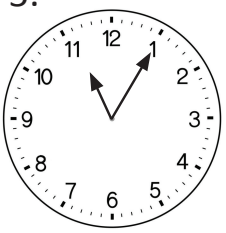
12:25

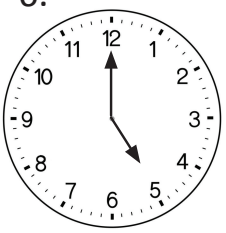
25 minutes past 12

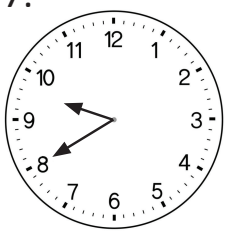
2. 

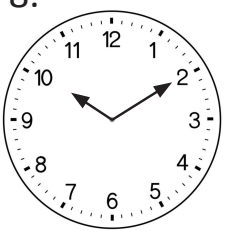
3. 

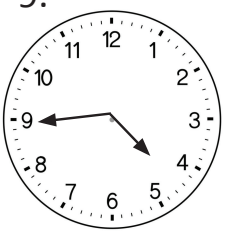
4. 

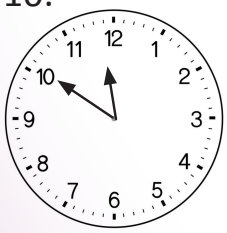
5. 

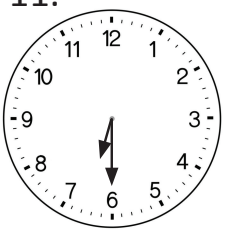
6. 

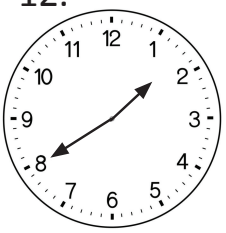
7. 

8. 

9. 

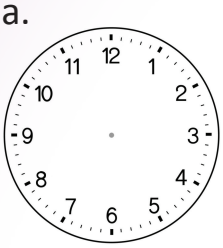
10. 

11. 

12. 

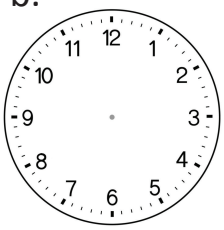
II. Draw the arms of the clock to show the time.

a.



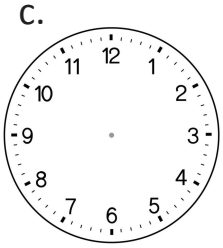
Quarter past five

b.



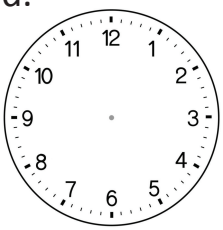
Quarter to seven

c.



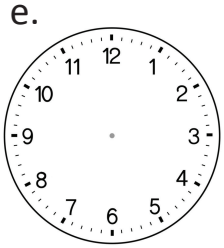
Half past eight

d.



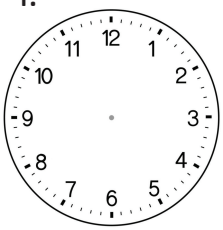
5 minutes past 7

e.



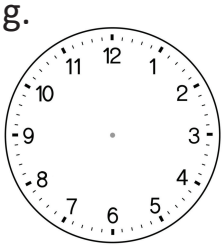
2:15

f.



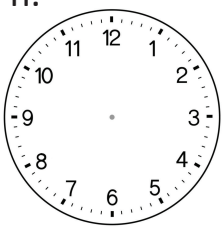
20 minutes past 12

g.



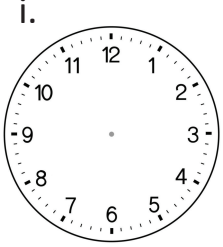
20 minutes past 9

h.



7:55

i.



45 minutes past 10

Concept Section

❖ Time before and after

Parikshit's exams start tomorrow.

He has to report the exam hall by 8:20 in the morning.

So, he plans to start his day a little early and reach school by 8:00.

Usually, he wakes up at 6:00 in the morning, but he decides to wake up an hour before the usual time.

What time has he to fix the alarm?

6:00 – 1 hour = _____

After getting done with his daily routine by 5:30, he revised for his Maths Exam for an hour. At what time did he end his revision?

5:30 + 1 hour = _____

He takes 1 hour to have his breakfast and get ready for school. At what time would he start from home to school?

6:30 + 1 hour = _____

EXERCISE 10.2

I. Find the time

a) 2 hours after 2:00 _____

b) 1 hour before 10:00 _____

c) 2 hours before 4:20 _____

d) 3 hours after 7:50 _____

e) 1 hour after half past 1 _____

f) 1 hour before quarter past 8 _____

g) 2 hours after ten minutes past 12 _____

h) 1 hour after 30 minutes past 3 _____

i) 2 hours before 1:55 _____

j) 1 hour before 25 minutes past 7 _____

Thinking skills

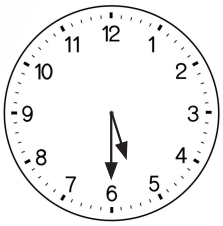
- ★ Which hand of the clock completes one round in 1 hour?
- ★ Which hand of the clock completes one round in 12 hours?

Concept Section

❖ How Long?

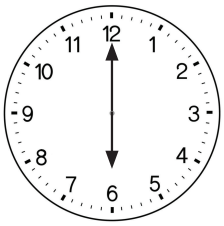
Abhimanyu was an expert at archery. He does his warm up exercises from

Start



to

End

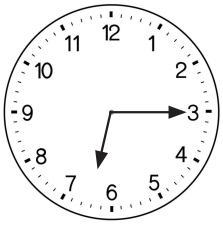


How long does he do the warm up?

30 minutes or half hour

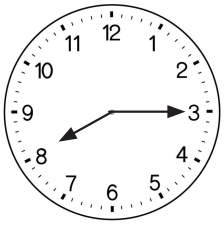
Then he starts his practice

Start



to

End



How long does he practice in the morning?

6:15 to 8:15 ⟶ 2 hours

EXERCISE 10.3

I. How long do you need to do the following every day?

Say whether you need few minutes / few hours.

Tick the correct answer.

a) Wearing the dress (minutes / hours)

b) Doing warm up exercises (minutes / hours)

c) Playing a football match (minutes / hours)

d) Eating breakfast (minutes / hours)

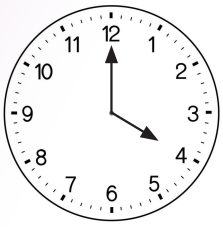
e) Arranging your books in a bag (minutes / hours)

f) Time spent in school (minutes / hours)

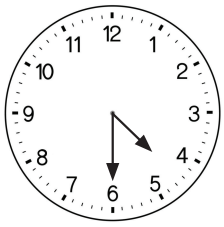
II. The start and end time of a few events are given. How long do they take?

1) Jogging

Start



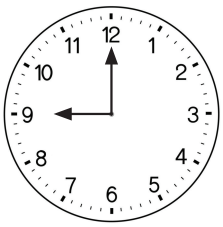
End



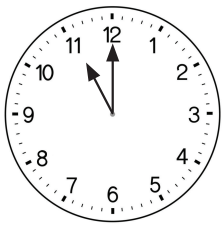
How long? _____

2) Writing an examination

Start



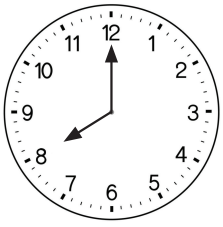
End



How long? _____

3) Getting ready to school

Start



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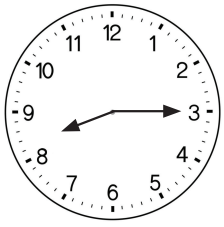


How long? _____

Concept Section am / pm

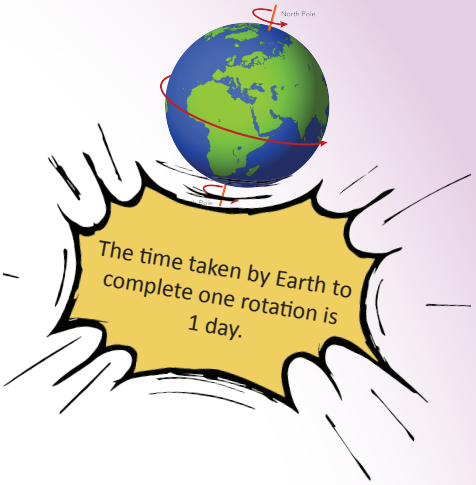
Baskar has to attend a meeting at Bengaluru on Friday. He reserved a train ticket well in advance.

Baskar reached the railway station to board the train at 7:00 p.m., but he was not able to board the train. He missed the train.

DO YOU KNOW WHY?

Baskar booked a ticket for the train at 7:00 in the morning on Thursday but he reached the railway station at 7:00 in the evening.

Ante meridien (a.m.) and Post meridien (p.m.)

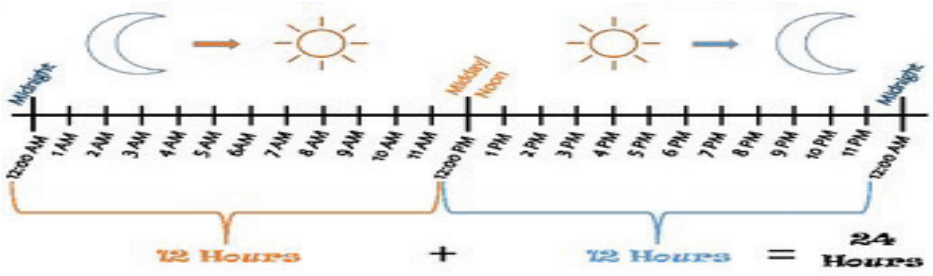


We know that 1 day has 24 hours.

★ The time after 12 midnight before 12 noon is written with **a.m.**

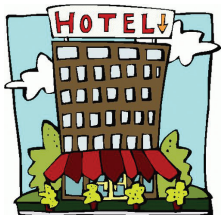
★ The time after 12 noon to before midnight is written with **p.m.**

a.m. p.m.



Example

Swapna went to Mysore with her family for a summer vacation. She visited many tourist spots there during her visit. After the trip she noted down the places, along with the time that she had visited, the places in her diary.



- Left hotel at 9 O'clock in the morning.

  We say 9:00 a.m.

- Reached Mysore Palace at 10:30 in the morning.

  It is 10:30 a.m.

- Lunch at 12 O'clock. It is written as 12 noon.
- Visited Botanical Garden at 4:15 in the evening.

  It is 4:15 p.m.

- Returned to hotel at 9 O'clock in the evening.

  It is 9:00 p.m.

We don't use a.m. or p.m. with 12 O'clock.
We write 12 noon and 12 midnight respectively.

EXERCISE 10.4

I) Write the time using a.m. or p.m.

a) Rohan gets up at 6:15 _____

b) Dinner at 8:10 _____

c) Doing homework at 5:30 in the evening. _____

d) Tennis practice at 7:00 in the morning. _____

e) Football match at 4:45 in the evening. _____

f) 1:50 at night. _____

II) Find the time

a) 1 hour after 8:00 a.m. _____

b) 1 hour before 2:30 p.m. _____

c) 3 hours after 10:30 a.m. _____

d) 1 hour before 1:00 a.m. _____

e) 2 hours after 10 O' clock in the morning. _____

f) 2 hours before 12 midnight _____

g) 1 hour after 11 am _____

III) Applications of time in real life

1) Kayalvizhi's music class started at 5:30 a.m. and ended after an hour. At what time did it end?

2) Ravi travelled from Trichy to Madurai by Tejas Special Express, the duration of the journey was 2 hours. He reached Madurai at 12:00 noon. At what time did the train leave Trichy?

Thinking skills

★ How many rounds does the hour hand complete in a day?

★ How many rounds does the minute hand complete in a day?

Calendar

We use a calendar to know the date, day, month and year.

The Gregorian calendar is the most widely used calendar in the world today.

We know an ordinary year has 365 days. In an ordinary year February has 28 days. The year in which February has 29 days, is called a leap year.

A leap year has 366 days.

Leap year comes once in 4 years.

The earth takes 365 days and 6 hours to complete one revolution around the Sun. In 4 years, (6h x4=24h) it comes to 24 hours.

So, 1 day is added in February once in 4 years.

➢ Observe the number of days in February in the given years.

February 2020

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	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

February 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	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	1	2	3	4	5	6

February 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	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	1	2

Identify the leap year from the above calendar.

Facts Corner

People born on 29th February are called Leaplings or Leapers.

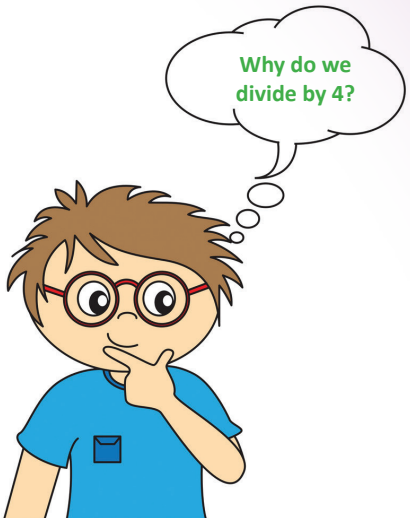
➢ To find whether a year is a leap year, divide the number formed from ones and tens digit by 4. If the remainder is '0' then the given year is a leap year. It is also a leap year, if the last two digits are '00' and the first two digits are divisible by four.

Example: 20<u>00</u> is a leap year, 20<u>04</u> is a leap year, 20<u>10</u> is not leap year.

The last leap year was _____. The next leap year would be _____.

Example 1. Check if 2022 is a leap year.

Divide 22 by 4, we get 2 as the remainder. Hence 2022 is **not a leap year.**



Example 2. Check if 2024 is a leap year.

Divide 24 by 4, we get the remainder as 0. Hence 2024 is **a leap year.**

➢ 7 days make a week.

How many weeks make a year?

One year = 365 days

Divide 365 by 7, we get 52 as the quotient.

So, **1 year = 52 weeks.**

EXERCISE 10.5

I) Fill in the blanks.

a) Leap year has _____ days.

b) In a leap year, February has _____ days.

c) Leap year comes once in _____ years.

d) A year has _____ weeks.

e) Months with 31 days are _____ , _____ ,_____

_____ , _____ , _____ , _____ .

f) Months with 30 days are _____ , _____ , _____ , _____ .

Thinking skills

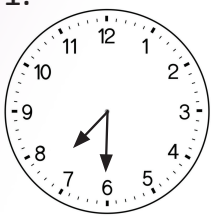
I was born in the year 2016. My birthday comes only once in 4 years.

What is my date of birth? _____

WORKSHEET

I) Write the time

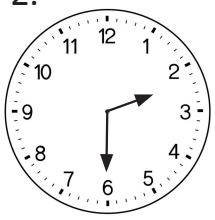
1.



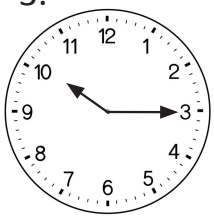
7:30

half past 7

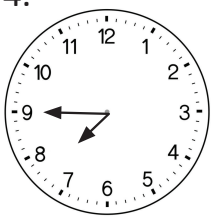
2.



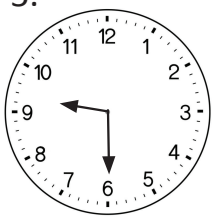
3.



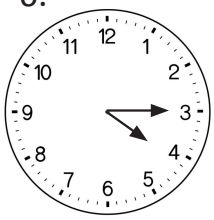
4.



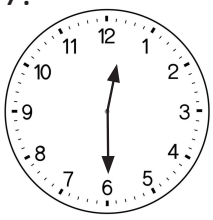
5.



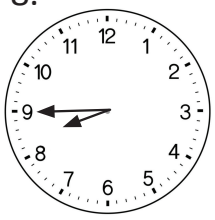
6.



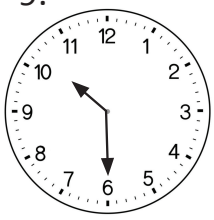
7.

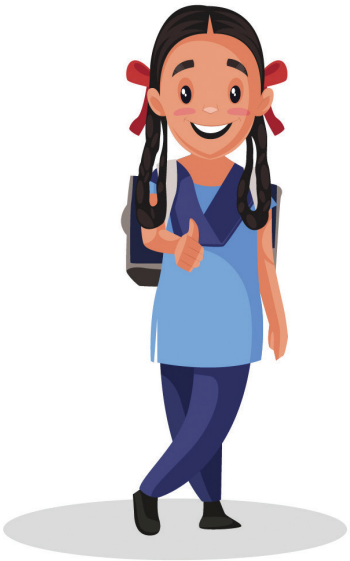


8.

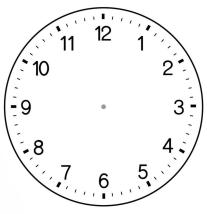


9.

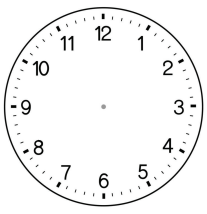




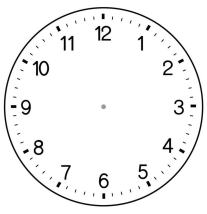
II) Draw the hands of the clock for the given time.



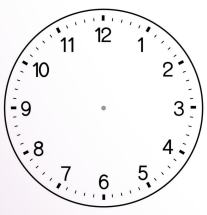
1:05



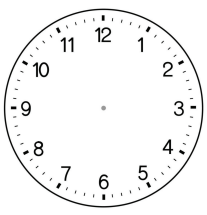
2:30



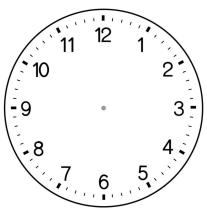
3:00



5:50



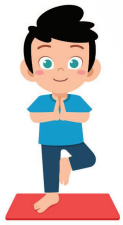
2:10



4:15

III) Daily routine of Ajay is given. Read the paragraph and answer the questions that follow.

Ajay gets up at 5 O' clock in the morning. He goes walking for an hour. He has his breakfast at 8:00. He goes to school at 9:30 and comes back at 4:00 in the evening. After school, he goes for yoga class at 4:30 and comes back at 5:30. He starts doing his home work at 6:00. He takes his pet dogs for a walk 1 hour before his dinner at 8:30 and goes to sleep 2 hours after dinner.



A. Write the time with a.m. / p.m.

1) Ajay comes back from walk at _____

2) At what time he does go to sleep? _____

3) At what time he takes his dogs for a walk? _____

B. Write the time with a.m. or p.m.

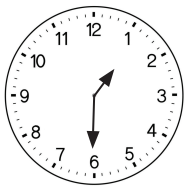
1) Ajay gets up at _____.

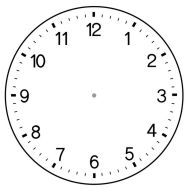
2) He goes to school at _____.

3) He goes for yoga class at _____.

IV) Read the time in the clock Draw the hands of the clock to show the time before or after

a)

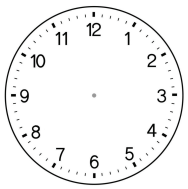


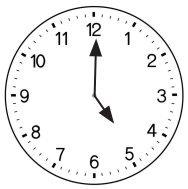


2 hours after

Time _____ Time _____

b)

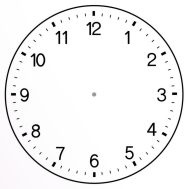


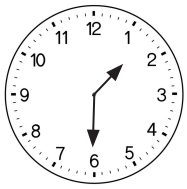


1 hour before

Time _____ Time _____

c)

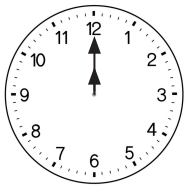


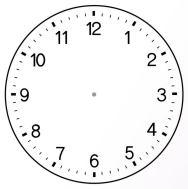


2 hours before

Time _____ Time _____

d)





3 hours after

Time _____ Time _____

Test yourself :

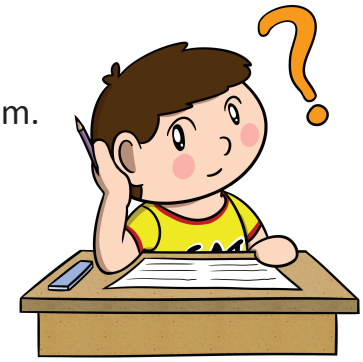
27th Feb 2020 was Thursday
1st March 2020 was _____

Time in real life

I. Find the time.

1) A football match started at 9:30 a.m. and ended at 11:30 a.m.
   The match was played for _____ hours.

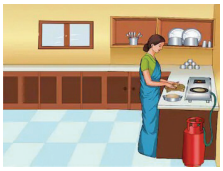
2) Sachin started to clean the house at 10:00 a.m. It took 3 hours for him to complete the work.
   He completed the work at _____ (1 a.m./ 1 p.m.)



3) The school planned to start the annual day program at 5:30 p.m.
   Students were asked to report an hour before the start.
   So, the students have to report at _____.

4) Ravi started his morning jog at 5 a.m. and jogged for 2 hours.
   At what time did he complete his jogging? _____

II. A day with Amira and her mother.



- Amira's mother gets up at 5:30 a.m.
  She cooks for 1 hour.
  She completes cooking at _____.

- She leaves for office at 9:00 a.m. and comes home at 1:00 p.m.
  She works for _____ hours in the office.

- Amira and her mother exercise from 3:00 p.m. to 5:00 p.m.
  They exercise for _____ hours.

- They have dinner at 8:30 p.m. Amira completes her homework an hour before dinner.
  She completes her homework at _____.

- She goes to sleep 2 hours after dinner.
  She goes to sleep at _____.

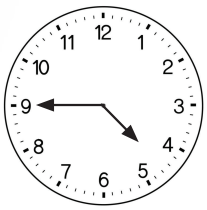
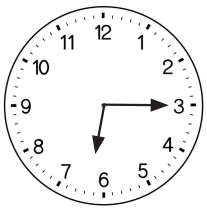
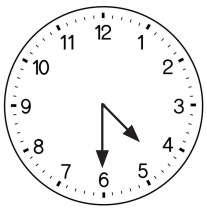
Higher Order Thinking Skills

Use the clues to find the correct clock from the given choices.

Challenge 1

- I am between 2 O'clock and 6 O'clock.
- I am neither quarter past nor quarter to an hour.

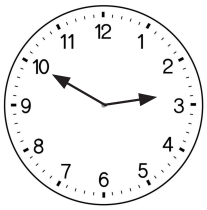
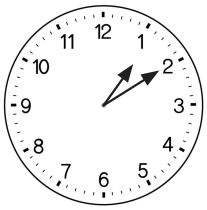
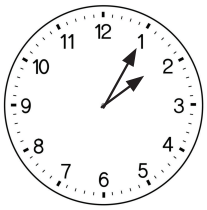
  What time am I? _____

Challenge 2

- My short hand points at 1.
- My big hand points at the number which is double that of the short hand.

  What time am I? _____

Arts Integrated Activity

Prepare a time table of your daily routines and draw the clock showing the time for each activity.

Lab Activity

Make your own calendar and mark the birthday of your family members and friends. Also mark the days of the memorable events and important activities in it.

JANUARY 2024						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
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	1	2	3	4

JANUARY

4 - World Braille day

9 - Guru Gobind Singh Jayanti

11 - Death Anniversary of Lal Bahadur shastri

12 - National Youth Day/ Swami Vivekananda Jayanti

14 - Lohri / Bhogi

15 - Makar Sankranti/ Pongal

15 - Indian Army Day

23 - Netaji Subhash Chandra Bose Jayanti

24 - National Girl Child Day

26 - Republic Day

28 - Birth Anniversary of Lala Lajpat Rai

30 - Martyr's Day

11 MEASUREMENT

LEARNING OUTCOMES:

At the end of this lesson, children will be able to:

- Compare the size of objects without actual measurement.
- Understand how to measure light or heavy objects.
- Compare the capacities of vessels.
- Understand the use of standard units.
- Convert from smaller to bigger units of measurements and vice versa
- Solve real-life problems of length, weight, and capacity.
- Estimate length, weight, and capacity.

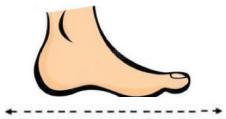
Measurement of Length

Non-standard units:

a hand span

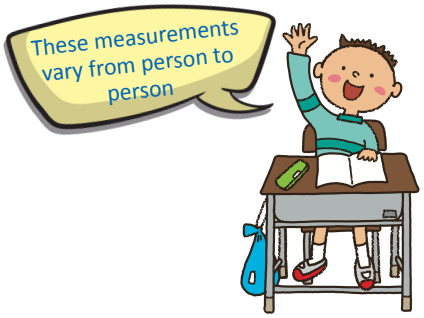
a stride

a cubit



a foot

Why are they non-standard units?



Activity 1:

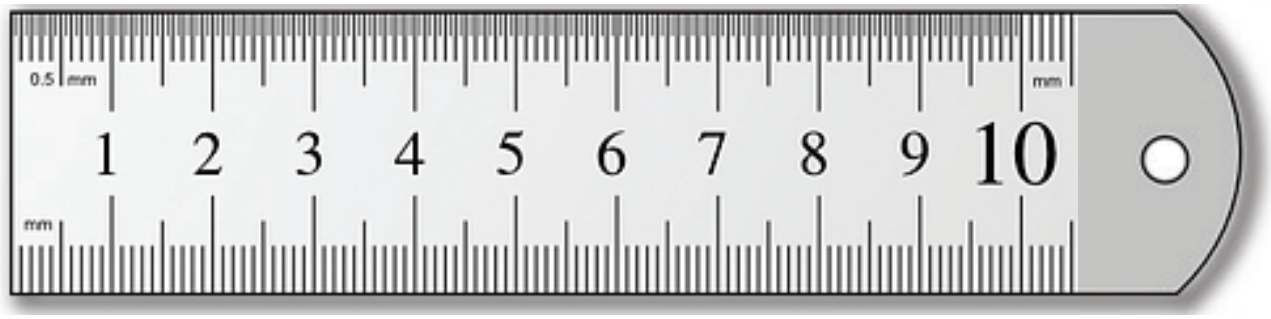
How many hand spans of yours is your study table, Measure. Ask your mother to measure using her hand span. Then let your younger brother measure the table with his hand span.

What did you observe? Are they the same?

Mine:_____
Mother's:_____
Brother's:_____

Standard units

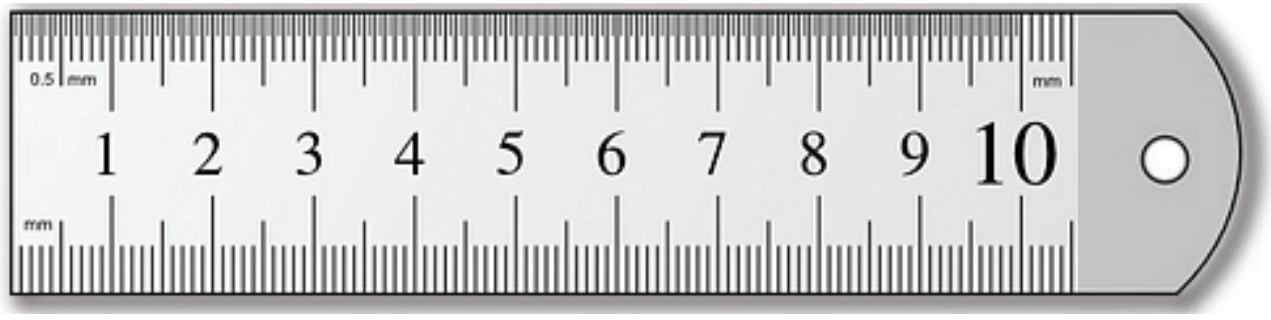
Millimetre: Very small lengths are measured in millimetres.



The length between two small lines on this scale is a millimetre. We write it as mm in short.

1. Mobile phone is 8 mm thick.

A_____B



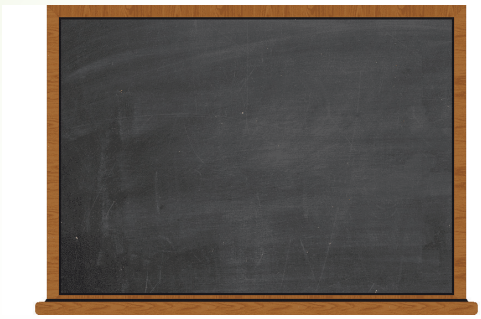
Length of line segment AB is 5cm

Activity 2:

Collect 5 objects that can be measured in centimetres.

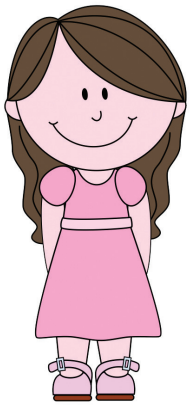
Metre: 100cm is 1 metre. In short, we can write it as m. The cloth merchant uses a metre scale to measure cloth.

1. The black board in the class room is 4m long.



2. Raju is 130 cm tall whereas Radha's height is 120 cm. Who is taller?

Raju



Radha

3. Length of the class room is 5m

Activity 3:

1. Measure the length of your school playground.
2. Measure the height of the flag pole and a tree in your school and compare.
3. Find the height of your tallest and the shortest friend.

Kilometre is the unit used to measure long distances. We can write it as km. Kilo means 1000. 1km=1000m

Do you know ?

1. The national speed limit is 48km per hour.

2. Bengaluru is 336km away from Chennai.

3. The Marina beach runs a distance of 6km, making it the longest natural urban beach in the country.

Value Based Question

Find any 5 measures of length which can be measured in km.

EXERCISE 11.1

1. Circle the closest measurements:

a. A pen is about _____ long. (12cm, 12m, 12km)

b. Height of a tree is about _____ (5cm, 5m, 5km)

c. The distance between Chennai and Mahabalipuram is _____. (54km, 54m, 54cm)

2. Fill in the blanks with the correct unit of length.

a. Length of the feather is about 5 _____.

b. Your house is about _____ away from the school.

c. Maintain a social distance of 2 _____ from each others.

d. Length of your pencil box is about 20 _____.

e. Height of the class room is about _____.

3. Which is longer?

a. Your index finger or little finger?

b. Length of a tooth brush or its cover?

c. Depth of a well or depth of a water tank?

Conversion of length

1m = 100cm

1km = 1000m

Higher unit to lower unit

km $\xrightarrow{\text{multiply by 1000}}$ m $\xrightarrow{\text{multiply by 100}}$ cm

Lower unit to higher unit

cm $\xrightarrow{\text{divide by 100}}$ m $\xrightarrow{\text{divide by 1000}}$ km

Example 1

a. Convert 4m to cm

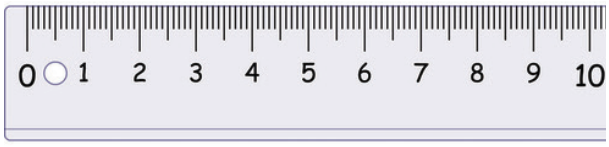
1m = 100cm

4m = 4 x 100 = 400cm.

b. Convert 2m 45cm into cm

2m = 200cm

$$\begin{array}{r} +45\text{cm} \\ \hline 245\text{cm} \end{array}$$



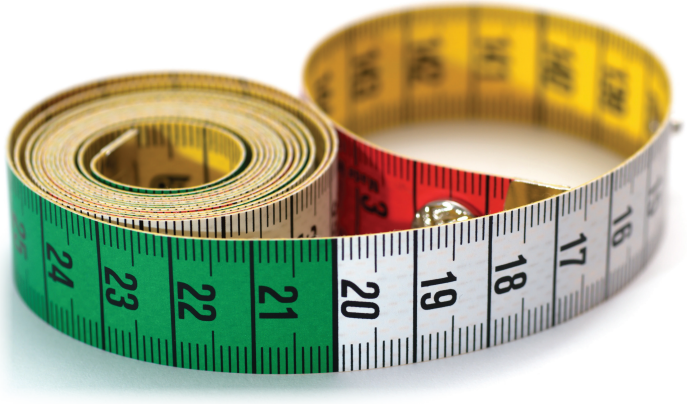
c. Convert 15m 5cm into cm

= 1500cm + 5cm = 1505cm

d. Convert 627cm into m and cm

627cm = 600cm + 27cm

6m 27cm



e. Convert 3km 549m into m

3km + 549m

3000m + 549m = 3549m

f. Convert 3050m into km and m

3050m = 3000m + 50m

= 3km 50m

EXERCISE 11.2

1. Convert into centimetres:

a. 2m b. 45m c. 1/2 m

d. 9m 64cm e. 10m 3cm f. 1/4 m

2. Convert into metres and centimetres:

a. 700cm b. 950cm c. 1005cm

d. 900cm e. 560cm f. 1540cm

3. Convert into metres:

a. 1km b. 2km 370m c. 10km 863m

d. 9km 45m e. 7km 7m f. 1/2 km

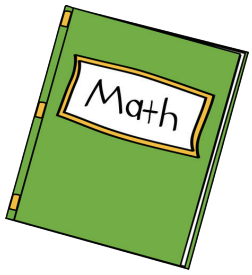
4. Convert into kilometres and metres:

a. 6000m b. 4518m c. 9604m

d. 12525m e. 3048m f. 6006m

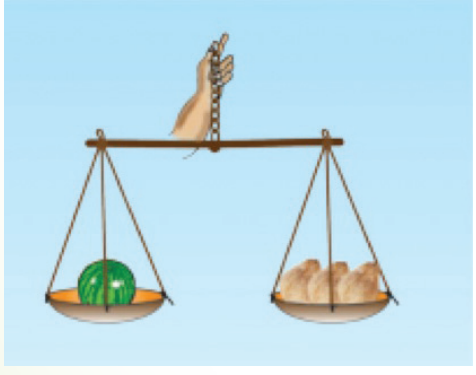
Measurement of Weight

Arrange in ascending order based on their weight



1._____ 2._____ 3._____ 4._____

Weight : It is measured by using a balance comparing a known weight with an unknown weight.



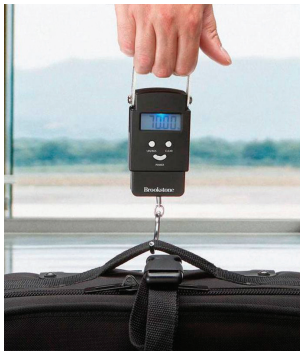
Weight of the watermelon equals the weight of three coconuts

1kg of carrot

20kg of grain

3kg of apples

The pointer of the balance points tilts towards the heavier side.



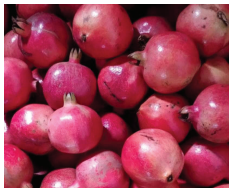
Units of Mass

Lighter objects are measured in grams.

500g

600g

700g



800g

900g

Heavier objects are measured in kilograms:

50kg

20kg

Higher order thinking skills

Find the weight of your friends. Find out how many of them are below the normal weight. Advise them to take healthy food.

Conversion of units: 1kg = 1000g

Example:

1. Convert into grams:

a. 5kg
5kg=5x1000g
= 5000g

b. 8kg 400g
8kg=8x1000g
8000g + 400g = 8400g

c. 10kg 50g
10kg=10x1000g
10000g + 50g = 10050g

2. Convert into kilograms and grams:

a. 3000g
1000g=1kg
= 3kg

b. 2500g
1000g=1kg
2kg+ 500g = 2kg 500g

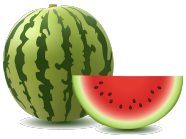
c. 12055g
1000g=1kg
12000g + 55g = 12kg 55g

EXERCISE 11.3

1. Fill in the blanks with correct measures:

a. Weight of mangoes _____ (2kg, 2g)

b. The gold coin weighs _____ (2g, 2kg)



c. Weight of a watermelon _____ (3kg, 300g)

d. Normal weight of a 7 year old child is _____ (25kg, 12kg)

e. A pack of peanut candy measures _____ (100g, 100kg)

2. Convert into grams:

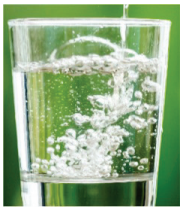
a. 6kg
b. 15kg
c. 4kg 750g
d. 2 1/2 kg
e. 9kg 40g
f. 3kg 5g

3. Convert into kilograms and grams

a. 8000g
b. 6750g
c. 1050g
d. 15008g
e. 9999g
f. 20000g

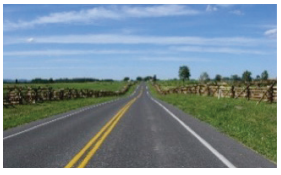
Measurement of Capacity

What would you like to measure on these: length, mass or capacity?Why?








Capacity: Capacity is the maximum quantity of liquid a container can hold.




Standard units: We need a standard unit to measure the capacity of a container and the quantity of a liquid.

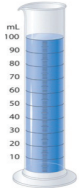
To measure the capacity of small containers we use *millilitre(ml)*




Litre *(l)* is a larger unit of capacity.







Conversion: 1L=1000mL

EXERCISE 11.4

1. Fill in the blanks with the correct measure:

1. Capacity of this jar is _____. (3L, 3mL)

2. Water in the shown container could be _____(2L, 200mL)

3. Capacity of the water tank is _____(1000L, 1000mL)

4. _____ of medicine can be stored in this bottle. (50L,100mL)

5. This pen can be filled with _____ of ink. (1L, 10mL)

2. Convert into millilitres:

a. 7L b. 25L c. 3L 564mL

d. 9L 8mL e. 10L 50mL f. 1/2 L

3. Convert into litres and millilitres:

a. 5000mL b. 5075mL c. 12,375mL

d. 1700mL e. 9004mL f. 1000mL

Experiential Learning:

1. Measure the gap between the two lines in your maths note book.
2. Measure the thickness of your table top.
3. Measure the width of your little finger.

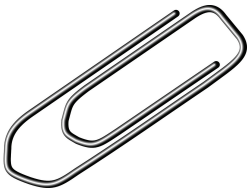
Centimetre: Small lengths can be measured in centimetres. In short it is written as cm.
10mm = 1 cm

1. Length of the pencil is 15cm

2. A toothpick is 10cm long.

WORKSHEET

1. Choose the correct answer for each:



a. i) Length of paper clip is _____.

ii) Weight of the paper clip is _____.

(3g, 3cm)

b. i) Weight of the book is _____.

ii) Length of the book is _____.

(20cm, 200g)

c. i) Height of the drum is _____.

ii) Weight of the drum is _____.

iii) Capacity of the drum is _____.

(2m, 20kg, 200L)

d. i) The dropper is _____ long

ii) It can hold _____ of medicine

iii) It weighs _____

(10g, 10mL, 10cm)

e. i) The quantity of juice in the jar is _____.

ii) The jar is _____ tall.

iii) Weight of the orange is _____

(25cm, 2L, 50g)

2. Fill in the blanks:

a. 5m = _____ cm

b. 2kg 500g = _____ g

c. 8954mL = _____ L _____mL

d. 3/4 L= _____ mL

e. 209cm = _____ m _____ cm

f. 7km 2m = _____ m

g. 2090g = _____ kg _____ g

h. 1/4 km = _____ m

i. 2649m = _____ km _____ m

j. 1/2 L= _____ mL

3. a. Raja asked his son Ravi to buy 1kg of sugar. Ravi went to a shop. He searched for 1Kg packet of sugar. But there were only 1/2 kg sugar packets arranged in the shelf. How many 1/2 kg packets has he to buy to make it a kg?

   b. The doctor advised Radha to take at least 3L water every day. She takes 2L 500mL of water during the day. How much water should she take at night?

   c. A pathway is of length 15m. Guhan was given a rod of 3m length and Lavan was given a rod of 5m to measure the pathway.

      a. How many times Guhan has to use the 3m rod to measure the pathway?

      b. How many times Lavan has to use the 5m rod to measure the pathway?

12 HANDLING DATA

LEARNING OUTCOMES

At the end of this lesson, children will be able to:

- Tabulate data
- Interpret data represented in a pictograph.
- Represent data using a pictograph

Warm up

Mr. Suresh is a book seller.

The following data represents the number of books sold on weekdays in his shop.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

 represents 1 book.

1) How many books were sold on Tuesday?

2) On which day, more number of books were sold?

3) How many more books were sold on Friday than Thursday?

4) The sale was equal on _____and _____

Concepts section

Pictograph

A collection of information is called data. Data can be collected by different methods.

Representing the data through pictures is called **pictograph.** We use pictures or symbols to represent the large data.

The teacher was explaining about vitamins and minerals in fruits to class 3 students.

Teacher: Students, have you seen fruits of different colours in a fruit shop?

Students: Yes ma'am.

Teacher: Tell me a fruit that you like.

Teacher tabulates the data.

Orange	
Banana	
Mango	
Guava	
Strawberry	

Key: 1 fruit represents 3 students.

Observe the table and answer the following:

1) How many students like banana?

   There are 4 fruits. So, **4X3 = 12 students**

2) Which fruit is the least favourite fruit of the students?

   Strawberry

   There are least number of fruits drawn for strawberry

3) Which fruit is liked by 24 students?

   Mangoes

   There are 8 mangoes drawn

4) How many more students like guava than orange?

   Guava 5x3 = 15 students and Orange 3x3=9 students.

   Therefore **15 – 9 = 6.**

   6 more students like guava than orange.

5) Find the total number of students in class 3.

   Total number of students = 66

   22 x 3 =66

   Number of pictures Number represented by 1 picture

EXERCISE 12.1

1. Read the pictograph and answer the following.

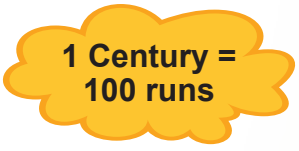
The data is about the number of runs scored by Indian cricket players in a one day match.

 represents 10 runs.

Dhoni	
Virat Kohli	
Rohit Sharma	
Rishabh Pant	
K L Rahul	

1) Who scored half a century?

_____



2) Who scored less than 30 runs?

_____

3) How many players have scored runs less than 50 and more than 20?

_____

4) How many more runs were scored by K L Rahul than Dhoni?

_____

5) Total runs scored in the match is _____.

2. The data is about the mobile phone brand used by the Students of class 3 for online class.

 Represents usage by 6 students.

i Phone	
Oneplus	
Samsung	
Jio	
Asus	

1) How many students use Oneplus?

_____

2) Which brand is used by most of the students?

_____

3) How many students use i Phone?

_____

4) _____ is used double in number compared to Jio.

5) Total number of students using Asus and i Phone is _____

6) Total number of students in the class is _____

Drawing Pictograph for the given data

Example 1

The school celebrated 'Dhan Utsav' in the month of October. Students of class 3 donated Stationery items.

The list shows the number of items donated in each Category.

Class	Pencil	Pen	Eraser	Notebook	scale
III	56	35	21	14	42

Let us represent the information through pictograph.

Since all the numbers are multiples of 7, the key is

1 picture = 7 items

Pencil	56 7x8	
Pen	35 7x5	
Eraser	21 7x3	
notebook	14 7x2	
Scale	42 7x6	

Total number of items donated = 24x7=168

Example 2

The data shows the favourite colours of the students of class 3.

Red	Green	Yellow	Blue	Pink
15	10	5	25	30

We represent the data with the help of a pictograph.

 Represents 5 students (Find out why?)

Colours	Number	Pictograph
Red	15 **5x3**	
Green	10 **5x2**	
Yellow	5 **5x1**	
Blue	25 **5x5**	
Pink	30 **5x6**	

Total number of students = **17** x **5** = 85

Number of pictures

Number represented by 1 picture

EXERCISE 12.2

1) Draw a pictograph for the given data. The data shows the number of story books of different regional languages in a library.

Key:  **Represents 4 books.**

Languages	Tamil	Hindi	Marathi	Gujarati	Bengali
Number	32	16	8	20	4

Languages	Number	Pictograph
Tamil		
Hindi		
Marathi		
Gujarati		
Bengali		

2) The table shows the number of animals seen by Sahana when she visited a zoo. Represent the data using a pictograph.

Key:  **Represents 8 animals**

Name of the animal	Lion	Tiger	Giraffe	Hippo
Number	8	40	32	16

WORKSHEET

1) Read the pictograph and answer the following. Marks scored by Ajay in a Periodic test conducted for 50marks.

Key: ⬭ represents 5 marks

Tamil	⬭ ⬭ ⬭ ⬭ ⬭
English	⬭ ⬭ ⬭ ⬭
Maths	⬭ ⬭ ⬭ ⬭ ⬭ ⬭ ⬭ ⬭
EVS	⬭ ⬭ ⬭ ⬭ ⬭

1) In which subject did he score the least marks?

2) How many more marks did he score in Maths than in Tamil?

3) In which subject has he scored 25 marks?

4) In how many subjects has he scored less than 30 marks?

2) The pictograph shows the number of 4 wheelers passing a traffic signal from 9:00 am to 10:00 am.

Bus	▭ ▭ ▭ ▭
Car	▭ ▭ ▭ ▭ ▭ ▭ ▭
Van	▭ ▭ ▭ ▭ ▭
Truck	▭ ▭ ▭

Observe the pictograph and answer the following.

1) If the number of vans are 20, ▭ represents ___ vehicles.

2) Name the 4 wheeler that passed by the signal, the least?

3) How many cars passed by the signal?

4) The number of cars exceeds the number of buses by _____

5) Total number of vehicles that passed the signal is _____.

II) Draw a pictograph for the given data

a) The table shows the number of Umbrellas sold in a shop.

Key:  **= __ umbrellas**

Month	August	September	October	November	December
Number	18	27	45	54	9

Value based Question

b) Akshay loves to feed animals. The data shows the number of animals fed by him in a month.

Key:  **= __ animals**

Month	Pigeons	Cats	Dogs	Cows	Crows
Number of animals	30	10	25	15	20

Do you feed animals? **We must take care of animals.**

Experiential learning

The teacher asks the students to find the following in their classroom.

- Number of fans
- Number of desks
- Number of tube lights
- Number of windows

Then she asks them to represent the data with the help of a pictograph.

Decide the key on your own.

Higher Order Thinking Skills

c) Primary students of a school were taken for a field trip.

The table shows the number of students in a class and the number of students who attended the trip.

Class	I	II	III	IV	V
Strength	40	36	50	44	64
Attended	34	30	48	36	52

Draw a pictograph for absentees

[Decide the key on your own.]

Vedic Mathematics

SUTRA: एकाधिकेन पूर्वेण
Ekādhikena Pūrveṇa

Meaning: By one more than the previous one

UPASUTRA: अन्त्योर्दशकेऽपि
Antyayor-dashake-api

Meaning: Sum of last digits is ten

Condition 1 Sum of the digits in the units place should be 10

Condition 2 The digits in the tens place should be the same number

Example

$$\begin{array}{r} 76 \\ \times\ 74 \\ \hline 5624 \end{array}$$

Calculation:
7+1=8
8x7=56
6x4=24

Srinivasa Ramanujan was an Indian mathematical genius who was born on December 22, 1887. Every year, his birth anniversary is celebrated as National Mathematics Day.

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