LESSON-14

L2U7X1

# Use of Measurements

**Lets go to Market**

One Sunday morning at 9:30 a.m. Pritom went with his father to the market in his father's scooter. His mother brought them a bag and their halmets. After reaching the market they brought the items listed below:

a) Sugar – 2 kg
b) Masoor Dal – 500 gm
c) Mustard Oil – 1 Ltr.
d) Teabag – 250 gm
e) Refined Oil – 500 ml
f) Salt – 1 kg
g) Cloth required for cartains used in door – 2 m 50 cm
h) Cloth required for cartains used in window – 1 m 50 cm

After shopping they both reached home at 11 a.m. Then they washed their face and took rest for sometime. Pritom's father said Pritom to make a list of the things they brought, time taken from going to the market to coming back home. **Lets help Pritom to prepare the table.**

| Time taken for Marketing | Total items that can be measured with the unit of length | Total items that can be measured with the unit of weight | Total items that can be measured with the unit of volume |
|---|---|---|---|
| Starting time to go to the market is 9:30 a.m. and the time of return is 11:00 a.m. | Cartain cloth for door = 2.5 m<br>Cartain cloth for window = 1.5 m | Sugar = 2 kg<br>Tea = 25 gm<br>Salt = 1 kg<br>Masoor Dal = 500 gm | Mustard Oil = 1 Ltr<br>Refined Oil = 500 ml |
| Total time : 1 hr 30 min | Total : 4 metre | Total : 3.750 kg | Total : 1.500 Ltr |

**Read the above table and try to answer the following questions:**

a) How much time did Pritom and his father need for marketing?
..... hr ..... min

b) What was the total length of the cloth for window cartain? .....metre

c) What was the total weight of the items bought by the unit of weight?
☐ kg ☐ gm

d) What is the total volume of the items bought with the unit of volume?
☐ Ltr.

◆ **Discuss in group**

Why did not Pritom keep the items he bought with the unit of length and the items that he bought with the unit of weight together or the items he bought with the unit of volume with the unit of time?

◆ **Note that**

Can you add or subtract between weight, volume, length or time? Surely not. Can you?

**Remember :** We can not measure length, weight, volume, time, money together. Only length with length, weight with weight, volume with volume, time with time, money with money can be added or subtracted.

**Let us add**

**Example : 5 m 34 cm, 8 m 50 cm, 2 m**

**Solution :**

5 m 34 cm
+ 8 m 50 cm
+ 2 m 00 cm
15 m 84 cm
Or, 15.84 cm

**Answer :** 15.84 cm

15 m 84 cm
= $15 \text{ m} + 84 \times \frac{1}{100} \text{ m}$ [1 cm = $\frac{1}{100}$ m]
= 15 m + 0.84 m
= 15.84 m

**OR**

5 m 34 cm + 8 m 50 cm + 2 m

= 5.34 m + 8.50 m + 2.00 m

= 15.84 m

**Answer :** 15.84 m

$$\begin{array}{r} 5.34 \\ 8.50 \\ +\ 2.00 \\ \hline 15.84 \end{array}$$

5 m 34 cm

$= 5\text{ m} + 34 \times \frac{1}{100}\text{m}$

$\left[1\text{ cm} = \frac{1}{100}\text{ m}\right]$

$= 5\text{ m} + 0.34\text{ m} = 5.34\text{ m}$

Similarly, 8m 50cm = 8.50 m

and 2 m = 2.00 m

## Add the following

a) 6 m 35 cm, 7 m 45 cm

b) 3 km 422 m, 10 km 891 m, 525 m

c) 18 km 70 m, 15 km, 23 km 378 m

d) 8 kg 732 gm, 35 kg 690 gm

e) 4 ltr 500 ml, 12 ltr 750 ml

f) 250 ml, 17 ltr 350 ml, 8 ltr 50 ml

## Let us subtract

7 mtr 30 cm from 15 mtr 40 cm

**Solution :**

$$\begin{array}{r} 15\text{ m } 40\text{ cm} \\ -\ 7\text{ m } 30\text{ cm} \\ \hline 8\text{ m } 10\text{ cm} \end{array}$$

= 8.10 m

**Answer :** 8.1 m

8 m 10 cm

= 8 m + 10 cm

$= 8\text{ m} + 10 \times \frac{1}{100}\text{m}$ $\left[1\text{cm} = \frac{1}{100}\text{ m}\right]$

= 8 m + 0.10 m

= 8.10 m or 8.1 m

We can solve this problem by converting each measure to the unit of metre.

15 m 40 cm – 7 m 30 cm

= 15.4 m – 7.3 m

= 8.1 m

**Answer :** 8.1 m

$$\begin{array}{r} 15.4 \\ -\ 7.3 \\ \hline 8.1 \end{array}$$

15 m 40 cm

$= 15\text{ m} + 40 \times \frac{1}{100}\text{ m}$ $\left[1\text{ cm} = \frac{1}{100}\text{ m}\right]$

= 15 + 0.4 m = 15.4 m

Similarly, 7 m 30 cm = 7.3 m

**Subtract the following**

a) 7 m 50 cm from 10 m 80 cm

b) 9 m from 14 m 30 cm

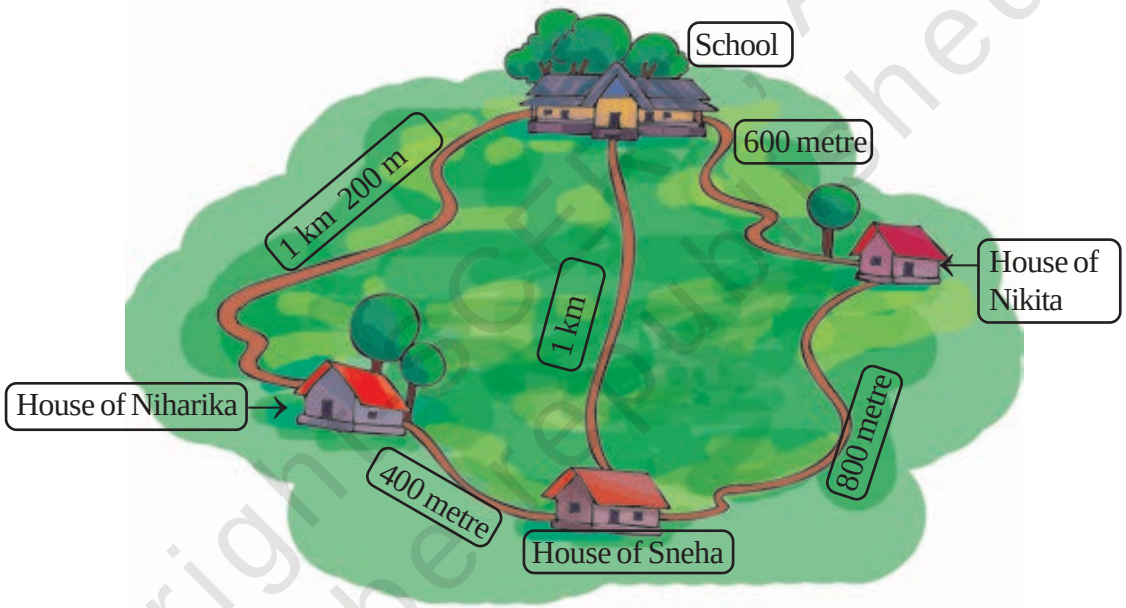
c) 110 gm from 160 gm

d) 5 kilogram 105 gram from 7 kilogram 250 gram

e) 6.250 kilogram from 12.500 kilogram

f) 2 ltr 500 ml from 3 ltr 900 ml

◆ **Let us observe the distance**




**Let us answer the following questions with the help of the above picture**

a) From whose home is the distance of the school minimum? ( )

b) Sneha takes 20 minutes to go to school direct. If she goes via Niharika's house, wheather she will take more or less time? ( )

c) Between Niharika and Nikita, whose home is the distance to school maximum? Is it of Niharika or Nikita? ( )

d) If Niharika and Nikita come to Sneha's home to play, who will have to walk more and how much? ( )

◆ **Let us find the distance**

Read the following table and discuss in group and try to fill the table (Distance are given in kilometre unit).

| ↓ → | Dhemaji | Lakhimpur | Tezpur | Nagaon | Guwahati | Bangaigaon | Dhubri |
|---|---|---|---|---|---|---|---|
| Dhemaji | 0 | 72 | 288 | | 462 | 672 | 749 |
| Lakhimpur | 72 | 0 | 216 | | 390 | | |
| Tezpur | | 216 | 0 | | | 384 | |
| Nagaon | | 267 | | 0 | 123 | | |
| Guwahati | | | | 123 | 0 | | 287 |
| Bangaigaon | | 600 | | | | 0 | 77 |
| Dhubri | | 677 | | | | 77 | 0 |

→ Observe whether the solutions obtained by each group are the same or not.

◆ **Let us solve some real problem related to length and distance**

1. The distance from Madhurjya's home to his maternal uncle is 52 km walking 0.75 km from his home, 5.25 km by E-Rickshaw and the remaining part by bus Madhurjya reaches his maternal uncle's house. How much distance does he travel by bus?
2. A piller 4 metres in length is in the middle of a pond. Its 0.5 metres is in mud, 2.25 metres in water. What is the length of the remaining part of the piller?
3. Haren's father cut 6 pillers 3 metres in length to build a cowshed. What is the total length of the pillers?
4. The circumference of a wheel of a bycycle is 250 cm. Manash travels 1.5 km from his house to school. How much rounds does the wheel make? (Hint: Circumference of a wheel = Distance travelled in one round)

◆ **Let us solve some problems related to weight**

Reema's uncle bought the following items from market in her birthday.

| Serial No. | Items | Quantity | Price rate (in Rs) | Total amount (in Rs.) |
|---|---|---|---|---|
| 01 | Rice | 5 kg | 30.00 | 150.00 |
| 02 | Masoor Dal | 2 kg | 70.00 | 140.00 |
| 03 | Potato | 3 kg | 20.00 | 60.00 |
| 04 | Onion | 500 gm | 40.00 | 20.00 |
| 05 | Tomato | 1 kg | 30.00 | 30.00 |
| 06 | Fish | 3 kg | 250.00 | 750.00 |
| 07 | Cake | 500 gm | 700.00 | 350.00 |
| 08 | Lemon | 10 nos. | 3.00 | 30.00 |
| 09 | Chilly | 250 gm | 100.00 | 25.00 |
| 10. | Turmeric | 200 gm | 150.00 | 30.00 |

Total =

Observe the table carefully and let us try to solve the following questions

a) What is the total weight of the items Sl. No.1 to 5?

b) What is the total cost of those items?

c) According to the table, what is the cost of 5 kg onion?

d) What was the total expenditure of Reema's uncle?

e) In the table which items, the price rate is the highiest?

**Remember :** 'Price rate' of an item represents the price of one unit always. Make a habit of writing the price of each item in a table whenever you go to market to buy something.

***Direction to Teacher :*** *Discuss with the students the meaning of 'Price rate' in classroom.*

◆ **Read the following problems and solve**

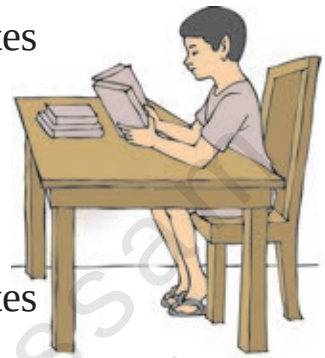
1. A bag containing 40 kg and 500 gram rice. How much rice is needed to make it 50 kg?
2. A tea stall requires 2 gas cylinder (L.P.G.) of weight 14.2 kg in a month. How much total L.P.G. is required in a month in the tea stall?
3. Pradip wanted to buy 4 apples. The vendor placed 1 kg weight one side and 4 apples another side. Then he placed 100 gm and 50 gm weight with the apples to keep the balance equivalent. Now what is the total weight of the 4 apples that Pradip bought?
4. If you divide 4 kg Bundia into packet of 250 gms, what will be the total number of packets?
5. One day Juwel goes to buy vegetables. The vendor tells him that he will get 300 gms beans in 10 rupees. But the vendor has 500 gms and 200 gms weight only. Now how will the vendor measure 300 grams beans?

◆ **Let us solve some problems related to volume (Solve in groups)**

1. Babul brought 2 litres milk from grand uncle, 5 litres from milkman Ramu and 2 litres and 500 ml from a hotel on his sister's birthday. How much milk in total did he bring that day?
2. From a co-operative retail shop Ananda, Fazal, Bipul and Simi bought 3 litres, 2.5 litres, 5 litres and 1.5 litres kerosin oil respectively. If there was 20 litres of oil then how much oil will be left in the shop after selling?
3. In a school 47 students of class five drink 2 litres water each. In a day how many litres of water will be required?
4. Among 350 participating students of Narayanpur Girls Middle School, lemon water has been distributed equally after the procession taken out in connection with National Education Day. If each student gets 200 ml of lemon water then what was the total amount of lemon water in litres?

◆ **Let us try to solve some problems related to time**

Amlan spent 24 hours in a school day as follows :



a) Cleanliness – 45 minutes
b) Eating – 1 hour
c) Games and Sports – 1 hour
d) Helping parents in household works – 1 hour
e) Rest after returning from school – 30 minutes
f) Sleeping at night – 8 hours
g) Studying (i) Morning 6:00 a.m. to 7:30 a.m.
(ii) Evening 6:30 p.m. to 9:00 p.m.
h) Remaining at school – Morning 8:45 a.m. to 3:30 p.m.

In the remaining time he spend in reading Newspaper/Magazine, watching T.V., Social work etc.

**Let us answer the following questions**

1. How much time does Amlan spend in reading? ..... hr ..... min
2. How much time does Amlan spend in school? ..... hr ..... min
3. How much time does Amlan get till he starts studying at home in the evening after his school ever? ..... hr ..... min
4. How much time Amlan gets for other work? ..... hr ..... min
5. If Amlan goes to bed at 9:30 p.m., when will he get up in the morning? ☐
6. What fraction of time of a day does Amlan spend in reading at home? ☐
7. What fraction of time of a day does Amlan use in sleeping? ☐

**Project :** Prepare a table, how you spend time in a holiday. Discuss with each other in the classroom.

* * *

Class V

## Lessonwise Learning Outcomes

| Lesson | Lesson Name | Learning Outcomes<br>After completion of the lesson the learners will be able to – |
|---|---|---|
| 1 | Numbers and Operations | ● works with large numbers<br>● reads and writes numbers bigger than 1000 being used in her/his surroundings<br>● performs addition, subtraction and multiplication on numbers beyond 1000 by understanding of place value of numbers |
| 2 | Angle | ● explores idea of angles and shapes<br>● classifies angles into right angle, acute angle, obtuse angle and represents the same by drawing and tracing |
| 3 | Area and Perimeter | ● finds perimeter of simple geometric figures like square, rectangle and triangle<br>● able to find out area of square and rectangle |
| 4 | Multiples and Factors | ● explains the meaning of factors, elaborates the concept of factors in factor tree, factor cycle<br>● explains the meaning of multiples |
| 5 | Three dimensional and Two Dimensional objects | ● draws three dimensional objects in two dimensional plane/paper.<br>● makes cube, cone and cylinder with the help of paper |
| 6 | Division | ● performs division in numbers beyond 1000 by understanding of place value of numbers<br>● divides a given number by another number using standard algorithms |
| 7 | Fractions and Decimal Fractions | ● acquires understanding about fractions, finds the number corresponding to part of a collection<br>● identifies and forms equivalent fractions of a given fraction<br>● expresses a given fraction in decimal notation<br>● converts decimals into fractions |

| Lesson | Lesson Name | Learning Outcomes |
|---|---|---|
| **8** | Measurements (Length) | ● relates different commonly used larger and smaller units of length<br>● converts larger units to smaller units and vice versa |
| **9** | Symmetry | ● understands symmetry<br>● identifies rotation and reflection symmetry like alphabet and shapes |
| **10** | Use of Numbers in day-to-day life | ● able to do tentative approximation of numbers<br>● applies the four fundamental arithmetic operations in solving problems involving money, length, mass, capacity and time intervals |
| **11** | Measurement of Volume and Weight | ● relates different commonly used larger and smaller units of volume and mass<br>● converts larger units to smaller units and vice versa |
| **12** | Use of Data | ● collects data related to various daily life situations, represents it in tabular form and as bar graphs and interprets it. |
| **13** | Design and Patterns | ● identifies the pattern in triangular number and square number<br>● relates different patterns with number patterns |
| **14** | Use of Measurements | ● able to solve real life problems related to length, mass, weight and time by using four basic arithmatic operations |

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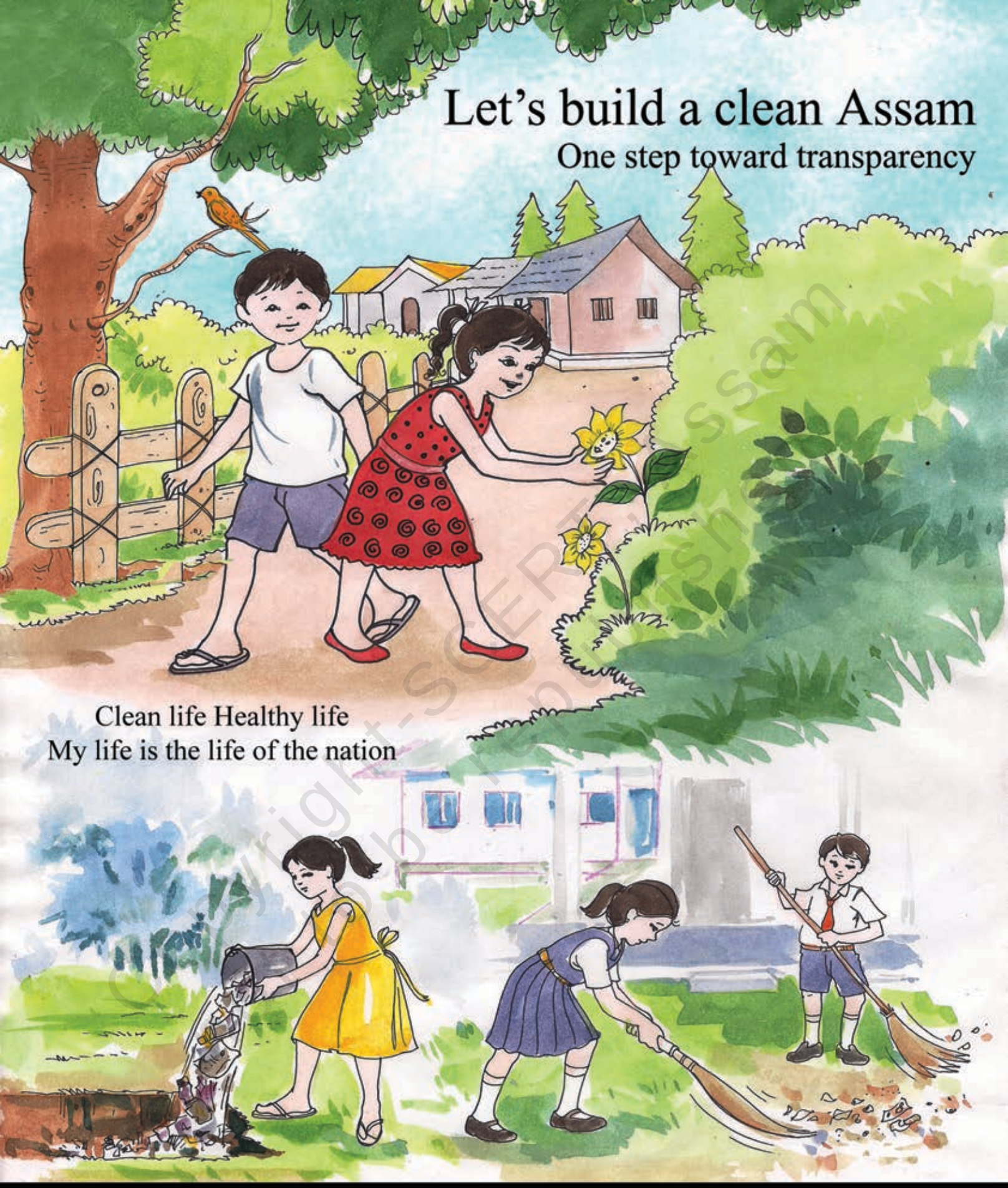


Garbage should be disposed in dustbins or in a hole. Keeping the locality and surroundings clean is as important as keeping our houses and our school clean.