

# 3



## LET'S GROW TREES

### 3.1. Observe the picture and discuss



- What differences do you notice in the above two pictures?
- Which picture do you like? Why?
- Where do you find more greenery? Why?
- Can you guess why the second picture has changed ? Where do you find more animals? Why?
- Are there any places in your locality without trees? Why?
- What should we do to avoid the occurrence of such conditions?

We feel very happy and cheerful when there are plants and trees around us. Forests have many types of trees. Forests render greenery to the earth. Forests should occupy one-third (33%) of the earth's space. But this cover is decreasing day by day and it is only 21% at present. As the area occupied by the forests is decreasing, the number of birds and animals is also decreasing. The decrease in rainfall leads to decrease in ground water level and the rivers are getting dried up. The earth's outer surface is getting hotter. Ecological balance is being disturbed due to environmental pollution, because of human activities.

If these conditions continue, it may lead to the extinction of all the living organisms on the earth. In order to overcome this situation, we have to protect our environment. It is our duty to safeguard (protect) trees and forest wealth. We should protect forests and grow trees where ever possible. Let us know how to grow plants, and the favourable conditions essential for their growth.

### 3.2. Is light essential for the growth of a plant?

#### Do like this



- ◆ Take two potted plants. Keep one potted plant in a dark room and the other potted plant in the sunlight, (open place). Water these plants every day. Observe them for a week. Record your observations in the table given below.

Change observed in days	Plant in the dark room							Plant in the open place						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Is it healthy?														
Height														
Other changes														

#### Group work



- ◆ Identify the difference in the growth of two plants and discuss in groups. Say the results ?
- ◆ Which plant is healthy? Why? What did you learn from this experiment?

### 3.3. Is fertile soil essential for the growth of a plant?

#### Do this

- ◆ Take two pots. Fill one of them with ordinary soil and the other with soil mixed with organic manure. Plant two similar healthy plants in them. Keep them in sun light. Water them everyday. Observe them for a week and tabulate your results.



Change observed in days	Plant in ordinary soil							Plant in fertile soil						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Is it healthy?														
Height														
Other changes														

### Group work



- ◆ Which plant has grown well? Why?
- ◆ What did you learn from this experiment?

## 3.4. Is water essential for the growth of a plant?

### Do this



- ◆ Select two plants growing in a fertile soil. Pour water to one of the plants every day and ignore (do not pour water) the other. Observe them for a week and write down your results in the table given below.

Changes observed in days	Plant without water							Watered plant						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Is it healthy?														
Height														
Other changes														

### Group work



- ◆ What did you learn about the conditions essential for the growth of a plant from the above experiments?
- ◆ What are the other factors that you have observed in the above experiments?
- ◆ Exhibit the observations of the experiments, discuss about the results in your class room.

We have learnt from the above experiments that water, sunlight and fertile soil are essential for the growth of a plant. Let us know about the places favourable for the growth of plants.

## 3.5. Growing plants

Plants prepare (produce) food not only for themselves, but also for all the living beings (creatures). Therefore, the plants are called the 'Producers'.

### Think and say...

- ◆ Which places are suitable for growing different types of plants? What are the precautions to be taken while planting trees? Why?

### 3.5.1. Which plants are to be planted and where?

- We should select a suitable place for planting a tree.
- Plant trees which are always green and give shade, like neem and Indian beech (Kanuga) in the school premises.
- Grow fruit bearing trees like lemon, mango, guava, cheeku, banana; flowering plants like temple tree, night jasmine (Parijatham), jasmine, nerium, nandivardanam and other trees like drumstick, curry leaf, coconut, neem and henna in the backyard of your house.
- Plant trees like neem, peepal, banyan and derris on both sides of road.
- Vegetables can be grown in pots on the terrace, in the balcony and in other places that receive sunlight.

### Think and say...

- ♦ Which type of plants can be grown in parks?
- ♦ Which plants can be grown in the little place available in your house?

We can grow fresh vegetables and leafy vegetables with less expenditure. The vegetables grown in our house are tasty and of good quality. These vegetable gardens prevent pollution and bring a cheerful atmosphere to the city dwellers. Watering these plants ensures our physical exercise and also helps in protecting the environment. Green plants growing on the terrace help reduce the temperature in the cities. Roofs of the houses remains cool.

### Advantages of trees

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Give cool breezes, increase humidity in the air.</li><li>• Give shade.</li><li>• Give us the flowers and fruits.</li><li>• Give fire wood.</li><li>• Help in occurrence of rains.</li></ul> | <ul style="list-style-type: none"><li>• Prevent floods and soil erosion.</li><li>• Provide shelter to numerous living creatures.</li><li>• Provide food to many living organisms.</li><li>• Give out oxygen.</li><li>• Bring greenery and joy.</li><li>• Give health and wealth.</li></ul> |
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### Do you know?

Mango, tamarind, banyan and citrus trees grow very big. Can we grow them in pots? The art of growing such big, tall trees in pots is called "Bonsai" It is a traditional art of Japan.





### 3.5.2. Precautions to be taken while planting a tree

- Dig a pit, and divide the soil taken out from the pit into two parts.
  - a) Upper soil is fertile. Mix organic manure or neem powder to this soil. Fill the pit with this soil first when you plant a tree.
  - b) The soil deep inside the pit is not so fertile. After planting a tree, put in the pit as an upper layer.
- Plant the trees in places which are well exposed to sunlight. The plant does not grow well if planted in shade. We can grow plants which require less sunlight and can grow under the shade.
- A certain distance must be maintained between two plants. Both the plants become useless when planted close to each other.
- If the plant is bought from a nursery, it is kept in a polythene (plastic) cover. Tear the cover with a blade without disturbing the mud and plant it in the soil pit.
- Immediately after planting a tree, press the soil with the feet so that the roots do not come into contact with the air. Insert a stick into the soil to provide support to the plant.
- Water the plants sufficiently. Excess watering immediately after planting may lead to the death of the plant.

### Think and Answer

- ♦ We have learnt about the precautions to be taken while planting trees. What protective measures are to be taken to grow plants well?

### 3.5.3. Plant Protection - Measures to be taken

- Use a locally available fence to provide protection to the plant.
- Termites do not infect a stick dipped in tar. Fix sticks dipped in tar on three sides of the plant. Now, wrap a net around them.



- To protect plants from animals, fix sticks dipped in tar on four sides of the plants and wrap either old cement bags or fertilizer bags around them. This is because the animals come near the plant only when they see the green leaves.
- When pests infect the plants, soak neem powder for five days in water and sprinkle water on the tree and the remaining powder on the visible side of the plant. This gives protection against the pests and the plant grows well.
- Try the following method, if it is not possible to water the plants daily. Take an empty two-litre water bottle and make a hole on its lid. Insert some cotton or a cotton cloth into this hole such that, only one drop of water falls from it. Cut the bottom of this bottle and fill it with water. Tie this bottle to the stick giving support to the plant. By adopting this method, we need not water the plant for a week.

### 3.6. Council for Green Revolution

We have learnt about planting trees and the protective measures to be taken. Where do we get these plants? Who will provide us? These issues bother us. Some people plant the locally available plants. Some people bring them from nurseries. The people belonging to the Council for Green Revolution are working through schools in the villages/cities to render (provide) the necessary help and provide plants to be grown in our schools.

Plant trees and develop relationship with them. It is our duty to protect the water, the air and the environment which are essential for our life. Our life depends on trees. The Council for Green Revolution reminds the adults and the children not only of planting and protecting plants but also need for a pollution free environment. The main aim of this organisation is to protect the environment. It has been formed only for this purpose. This organisation has laid a platform for every school by developing an understanding about the environment and make every students to participate in the Green Revolution. This organisation aims at planting one crore plants. It has supplied plants to 650 government schools so far. They have given five plants to each student. Thousands of teachers and students are made partners. Lakhs of plants are planted.

They impart knowledge to the students by asking them to read the environmental pledge, educate them on the precautions to be taken while planting the trees and their protection (safety measures).



**Teachers, students & Mrs. Leela Laxma Reddy, President of Council for Green Revolution in a school premises planting the trees.**

They are successfully organizing the programme by planting trees.

The organisation is fruitfully conducting the programme of planting trees by creating awareness among students regarding environmental pledge, precautions to be taken while planting trees, protective measures etc.

For the last two years, the Council for Green Revolution has been conducting 'Forest Motivating Movement' (Programme) as a part of plantation of one crore plants. Students and teachers from Mahaboobnagar, Nalgonda, Warangal and Ranga Reddy districts are carrying forward the movement. Medak district has started this movement. Two lakhs students have planted ten lakhs plants in one day. Students are made to take a pledge on environmental protection.

### **Greenery - Greenwood**

Gaddampally, ZPHS is an ideal example for greenery and won the Green School award recently. This school is located at Telakapally mandal in Nagar Kurnool district. The school Headmaster, teachers and students together tried and made it a green school.

The Council for Green Revolution has extended their cooperation by supplying them 400 plants. Half of them were planted in the school and the rest in their houses. By giving responsibilities of the plant protection and growth to the students we are enabling them to love and enhance their attachment with the plants. They celebrated birthdays and tied Rakhi to the plants.

### **Environmental Pledge**



- I will plant and grow trees as they give out oxygen which plays a vital role in the existence of the living organisms.
- I will motivate the people to plant trees as they bring rainfall.
- I will make all efforts to see that air, water and soil do not get polluted.
- I will let the people know the fact that the house which protects us from heat, cold and rain cannot be built (constructed) without trees.
- I will condemn cutting down of trees, exploiting forest wealth, factors causing pollution, interrupting nature. I will not allow such activities to take place any where.

On this occasion, I take oath to see that the people follow the above aspects and I too will obey them and set an ideal example.

- Children, you too take this pledge in your school.



Thus, to make the environment green in the school not only the Council for Green Revolution, but also other organisations like Vandemataram Foundation, the Forest Department, National Green Core etc., are putting their best efforts. If you want to plant trees in your school or in your village, consult Council for Green Revolution.

### Certificate

Council for Green Revolution presents 'Love for the Forests' award and medal to the students who participate in 'Forest - Motivating Movement' for planting, growing and protecting the plants given to them and also help in protecting the environment.

### Think...

- ♦ Is there any voluntary organisation in your locality working for the environment and greenery? What are its functions?

### Do you know?

The National Green Core was established with the objectives of filling the school surroundings with greenery and protecting the environment. Enjoying the greenery with the learning experience, recognizing the hard work, identifying the environmental pollution, explaining about it, creating awareness towards the conservation of environment to the villagers etc. are its other goals. At present it is functioning in high schools of our state with various activities.

### Do you know?

Many people migrate from the villages to towns and cities in search of livelihood (jobs). 67% of the population lives in towns. As the population is increasing in cities, the quantum of waste products and problems is also arising. Temperature is increasing along with pollution. So, plans are being made to convert the waste material of the living organisms into manure and use it as a fertilizer to grow vegetables. Crores of rupees is being spent to dispose the garbage in Hyderabad city alone. This problem can be solved by converting the organic garbage into organic manure. Department of Horticulture has planned and implemented the process of making compost from kitchen waste to use it as a manure for plants in pots on the terrace and balcony. Moreover, bags, polyethene covers, baskets, tubs, boxes, plastic plates, cement bags, ladders and old tyres are used in growing vegetables.

### Group work



- What steps would you take to promote greenery in your school?
- ♦ What will you do to protect the plants you planted?
- ♦ Whose help would you take to plant the trees?

## 3.7. Vegetables in the backyard.

When chemical fertilisers and insecticides are used in order to increase the yield, it results in poisoning the vegetables. Poisonous chemicals are found in the tests conducted on vegetables growing in the sewage water in cities. Consuming such vegetables leads to diseases like diabetes, cancer, hypertension etc.



In the olden days, there used to be an open place (backyard) in the every house. They used to grow the necessary vegetables and leafy vegetables. Gradually joint families and the number of big houses decreased resulting in the formation of small families and smaller houses. As the land rates are increasing considerably, houses are constructed in smaller area. So, it is not possible to cultivate vegetables. Every body is depending on the market for procuring vegetables. Chemicals are used to store them for transportation to cities. Such vegetables are not tasty and cause diseases (show their effect on our health) too.

We can cultivate healthy vegetables on the terrace of our house. We can grow vegetables that are good for our health in our house itself without using chemical fertilisers and insecticides. Instead we can use organic manure and neem oil to grow the vegetables.

### Do you know?

The U.N.O. has declared Neem Tree as the Tree of the Century.



Neem is the medicine for thousands of diseases.

### Think and say...

- ◆ Where do you bring vegetables from?
- ◆ What do you do to grow vegetables in your house?

### Keywords

producers	protection	Forest Motivating Movement
growing plants	places for plantation	Horticulture Department
sun light	plants protection	vegetables in the backyard
fertile soil	Environmental Pledge	Green Revolution
chemical fertilizers	organic manure	



### What have we learnt?



### 1. Conceptual Understanding

- a) Why should we all take the Environmental Pledge?
- b) What are the conditions essential for the growth of a plant?
- c) What precautions are to be taken while planting trees?
- d) What measures are to be taken for the protection of plants?
- e) What are the differences between the vegetables cultivated in our house and those purchased from the market?

## 2. Questioning and Hypothesis

- What questions would you ask to know about the factors essential for the plants to germinate and grow crops?
- What questions would you ask if you want to grow vegetables in your school or at home?

## 3. Experiments - Field Observations

### Observe and Discuss:

- Visit a nearby garden / nursery / park. Record the names of the plants which you see.

Flowering plants	Fruit bearing plants	Ornamental plants

- Plant two plants and observe their growth and record the changes in them.

## 4. Information Skills, Projects

Details about the plants planted in Gopalapuram during 2008 to 2012 are given in the following table. Observe them and answer the questions given below:

Year	Trees planted			Plants alive		
	In Schools	Road Side	In Forest Land	In Schools	Road Side	In Forest Land
2008	20	40	1050	15	18	860
2009	10	55	1200	8	16	1053
2010	18	35	2000	15	15	1758
2011	20	65	965	15	32	815
2012	25	45	1800	22	18	1763

- Where did they plant more trees?
- Where did less than half of the plants survive? What could be the reasons?
- How many plants were planted in the school in total? How many of them are survived?

- Which year did they plant more trees?
  - Which year did many plants survive? What could be the reason?
- a) Plant a tree and take care of it, record your observations daily.

Date on which the seed was sown : \_\_\_\_\_

Date on which the seed sprouted : \_\_\_\_\_

Size of the 15 day old plant, number of leaves : \_\_\_\_\_

Size of the 30 day old plant, number of leaves and branches : \_\_\_\_\_

Size of the 60 day old plant, number of leaves and branches : \_\_\_\_\_

### 5. Communication through Mapping Skills, Drawing Pictures and Making Models

- a) You are taking care of a plant you planted. Draw the pictures of the plant from the day it was sown to its 30th day in your note book.

First day of sprouting	15th Day	30th Day

### 6. Appreciation, Values and Creating Awareness Towards Bio-diversity

- a) Plants give us food, shelter and clothing. How should we deal with them?
- b) Collect songs about plants and exhibit them on the wall magazine. Sing them in Balasabha.
- c) We can split bamboo longitudinally. Make a list about the articles we can prepare by splitting bamboos. If bamboo did not have this special quality, what things would we miss? Think and write.
- d) How do you feel when you look at a beautiful flower / fruit / vegetable garden?

#### I can do this

- |  |          |
|--|----------|
| 1. I can explain the conditions necessary for the growth of a plant.                 | Yes / No |
| 2. I can demonstrate the experiment showing the growth of a plant.                   | Yes / No |
| 3. I can draw and explain the growth of a plant.                                     | Yes / No |
| 4. I can explain the precautions to be taken while planting a tree.                  | Yes / No |
| 5. I can take measures to protect the plant and also plant trees at school and home. | Yes / No |