

3



LET'S PLANT TREES

3.1. Observe the picture and say



- What difference did you notice in the above two pictures.
- Which picture did you like? Why?
- Where do you find more greenery? Why?
- Why does the second picture look like that? Can you guess?
- In the above given pictures, where will you find more animals? Why?
- Are there any places in your locality without trees? Why?
- What should we do to see that such condition does not occur?

We feel very happy and cheerful when we see plants and trees around us. Forests render greenery on the earth. Forests should occupy one-third (33%) of the earth's space. But the area occupied by the forests is decreasing day by day and it is 21% in our country at present. As the area occupied by the forests is decreasing, the number of birds and animals is also decreasing. The decrease in rainfall is lead to the drying up of the ground water. Rivers are becoming dry. The earth's outer surface is becoming hot due to the rupture of the ozone layer. Ecological balance is disturbed due to environmental pollution, from human actions.

If these conditions continue, it may lead to the extinction of the living organisms from the earth. In order to over come this situation, we have to protect our environment. We have to safe guard (protect) trees and forest wealth and it is our duty. We should protect forests and should grow trees where ever possible. So, now let's know how, to grow plants, trees and what are the essential conditions for their growth.

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

Do like this



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

Day	Change observed	Plant in a dark room	Plant in the open place
7th Day	Is it healthy? Length other changes		

Group work



- ◆ Discuss the changes observed and tell the result.
- ◆ 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. Fill the other with soil mixed with organic manure. Plant two similar healthy plants in them. Keep them in the sun light. Water them everyday. Observe them for a week and tabulate your results.



Day	Change observed	Plant in ordinary soil	Plant in fertile soil
7th Day	Is it healthy? Length 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. Supply water to one of the plant every day and ignore (do not supply water to) the other one. Observe for one week and write down your results in the table given below.

Day	Change observed	Plant without water	Watered plant
7th Day	Is it healthy? Length other changes		

Group work



- ◆ From the above experiments, what are the essential conditions for the growth of a plant?
- ◆ What are the other aspects (factors) that you have observed in the above experiments?
- ◆ Share the observations of the above experiments in your class room and discuss your results.

From the above experiments, we have learnt that water, sunlight and fertile soil are essential for the growth of a plant. You have learnt about the conditions essential for the growth of a plant. Now let's know about the places where we can grow 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 plants should be grown in which places? What precautions should we take while planting the trees? Why?

3.5.1. Which plants are to be planted and where?

- We should select a suitable place before planting a tree.
- Plant trees which are always green and give shade, like neem and kenuga in the school premises.
- Plant trees like lemon, mango, guava, cheeku, banana, drumstick, curry leaf, banana, coconut, peepal, neem, temple tree, jasmine, nerium, nandivardanam and fruit bearing trees in the backyard of the house.
- Plant trees like neem, banyan and derris on the either side of the roads.
- Vegetables can be grown in pots on the terrace, balcony and in places that receive sunlight.

Think and say...

- ◆ Which type of plants are to be planted in the parks?
- ◆ Which plants are to be planted in the very little place available in your house?

We can grow fresh vegetables and leafy vegetables with less expenditure. The vegetables cultivated in our house will be tasty and are of good quality. These vegetable gardens prevent pollution and bring a cheerful atmosphere to the city dwellers. Watering these vegetable plants gives us physical exercise and also helps in protecting the environment. The green plants on the terrace reduce the temperature in the cities. By doing so, the roof of the house remains cool.

Trees - advantages

- Cool winds blow. Increase humidity in the air.
- Give shade.
- Give flowers and fruits.
- Give wood (fuel) to cook.
- Help to bring rainfall.
- Give health and wealth.
- Prevent floods and soil erosion.
- Convert solar energy into food.
- Provide shelter to (many) numerous living creatures.
- Provide food materials to many living organisms.
- Give oxygen to breathe.
- Give joy and greenery.

Do you know?

Mango, tamarind, banyan and citrus trees grow very big. Can we grow them in pots? Such big trees which are grown in pots are called Bonsai Trees. This is Japan's traditional art.



3.5.2. Precautions to be taken while planting a tree

- Dug the pit and soil taken out from the pit should be divided into two parts.
 - a) Fertile soil is present on the outer surface of the pit. Take out this soil and make a heap on the right side of the pit. Mix organic manure or neem powder to this soil. Fill the pit with this soil first when you plant a tree.
 - b) Put the remaining half of the soil on the left side of the pit. The soil deep inside the pit is not so fertile. After planting a tree, put this soil on the outer surface.
- Plant the trees in places which are well exposed to sunlight. The plant does not grow well if planted in shade.
- A distance of 20 feet must be maintained between two plants. Both the plants become useless if 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 so as to provide support to the plant.
- Pour only sufficient water to the plant. More watering immediately after planting may lead to the death of the plant.

Think and say...

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

3.5.3. Protection of the plants - measures to be taken

- Construct 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 all sides of the plant 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 the pests infect the plants, soak neem powder for five days in water and sprinkle the 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.
- Do this if it is not possible to water the plants daily. Take a two-litred used water bottle and make a hole on its lid. Insert a wick or a cotton clothe 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 learned about planting trees and the protective measures to be taken. From where do we get these plants? Who will give them to us? These issues trouble 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 to render (provide) the necessary help and provide plants to grow in our schools.

Plant trees, develop relationship with them. It is our duty to protect the essentials of our lives the water and air and environment. Our life is depended on trees. The Council for Green Revolution reminds the adults and the children not only wealth but also 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 student to take part in the Green Revolution. This organisation aims at planting one crore plants. It has supplied plants to 650 Govt. schools so far. They have given five plants to each student.



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

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). They are successfully organizing the programme by planting trees.

For the last two years 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, Ranga Reddy and Prakasham districts are carrying forward the movement. Medak district has started this movement in 2012-13. 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 was an ideal example for greenery and won the Green School award recently. This school is located at Telakapaly mandal in Mahaboobnagar district. The schools Head Master, teachers and students together tried and made it a green school.

Council for Green Revolution has extended their co-operation by supplying them with 400 types of plants. Half of them were planted in the school and the rest in their houses.

Environmental pledge



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

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

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

Thus, to make the environment green in the school not only council for green revolution, but also organisations like Vandemataram foundation, 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 have participated in 'Forest - Motivating Movement' for carefully planting, growing and protecting the plants given by them and also helping in protecting the environment.

Think...

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

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 from high schools in our state with various activities.

Do you know?

Many people are migrating from the villages to towns and cities in search of livelihood (jobs). 67% of the population are living in towns. As the population is increasing in cities the quantum of waste substances and problems are arising. Temperature is increasing along with the 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 are spent to dispose garbage only in Hyderabad city. This problem can be solved by converting the organic garbage into organic manure. Horticulture department officers have planned and being implemented the process of making compost from kitchen waste and use it as manure for plants in pots on the terrace and balcony. Moreover, bags, polyethene covers, baskets, tubs, boxes, plastic plates, cement bags and old tyres are used in growing vegetables on ladders.

Group work



- ◆ What steps did you take to promote greenery in your school?
- ◆ What will you do to protect the plants planted by you?
- ◆ Whose help do 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 and earth. Poisonous chemicals are found in the tests conducted on vegetables grown by providing sewage water in cities. Consuming such vegetables leads to diseases like heart-attack, diabetes, cancer etc.

In olden days, there used to be an open place (backyard) in 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 small houses. As the land rates are increasing considerably, houses are constructed in small area. So, it is not possible to cultivate vegetables. Every body is depending on the market for vegetables and refrigeration to store them for transportation to cities. Such vegetables are not tasty and cause diseases (show their effect on our health).

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.

Do you know?

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



Neem is the medicine for thousand or diseases. "Don't spend thousands on diseases... It's beneficial to plant neem."

Think and say...

- ◆ From where do you bring vegetables?
- ◆ What do you do to grow vegetables at your house?

Keywords

Producers	Protection	Forest motivating movement
Growing Plants	Place to plant	Park department
Sun Light	Protecting the plants	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 to take the environmental pledge?
- b) What are the essential conditions for the growth of a plant?
- c) What precautions are to be taken while planting the trees?
- d) What measures are to be taken for the protection of the plant?
- e) What are the differences between the vegetables cultivated at our house and the vegetables 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?
- Write the questions that you would to ask if you want to grow vegetables in your school or at home?

3. Experiments - field observations

Observe and Say:

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

Flowering plants	Fruit bearing plants	Ornamental plants

- Plant two plants and observe their growth & record changes & your feeling.

4. Information skills, projects

Details about the plants being planted in Gopalapuram during 2008 to 2012 are given in the 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	15	35	2000	18	15	1758
2011	20	65	965	15	32	815
2012	25	45	10800	22	18	1763

- Where did they plant more trees?
- Where did less than half of the plants survive? What may be the reasons?
- How many plants were planted altogether in the schools? How many survived?

- In which year did they plant more?
 - In which year did many plants survive? What may be the reason?
- a) Plant and take care of a tree, record your daily observation.

Date when the seed was sown : _____

Date when 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 the plant, planted by you. Draw figures of the plant from the day it was sown to 30 days in your note book.

One the day sprouting	15th Day	30th Day

6. Appreciation, values and creating awareness towards bio-diversity

- a) Plants are giving us food, shelter and clothing. How should we deal with the plants?
- b) Collect songs about plants and exhibit them on the wall magazine. Sing them in classroom & during assembly.
- c) We can split bamboo longitudinally. Write a list about the articles prepared with it. If the bamboo stem did not possess this quality, what items will not be available to us. Think over and write.
- d) When you look at a beautiful flower garden, fruit garden and vegetable garden. How do you feel?

Can I do this?

1. Can explain about the conditions necessary for the growth of a plant. Yes / No
2. Can demonstrate the experiment showing the growth of a plant. Yes / No
3. Can draw and explain the growth of a plant. Yes / No
4. Can explain the precautions to be taken while planting a tree. Yes / No
5. Can take measures to protect the plant & plant trees at school and house. Yes / No