

2. Optional Activities

(A) Productive Fields of Work

1. Area : Food

1.1 Kitchen Gardening

Gardening tools and their uses

Pickaxe : for digging and loosening the soil

Hoe : for digging and loosening the soil

Spade : for drawing soil together, making the ground even, lifting soil into a basin

Basin : for carrying soil or manure from one place to another

Gardening trowel : for digging the soil for weeding

Digger : for making pits or furrows in the soil for transplanting seedlings

Hand fork : loosening soil for picking out stones

Fork : for prising out seedlings for transplantation

Secateur : hand tool for pruning branches

Watering can : for watering small plants

Spray pump : for spraying insecticides/ germicides on plants



My Activity

Write what tool you would use for the following purposes.

1. To carry manure for plants
2. To water potted plants
3. To prepare a bed
4. To spray a pesticide on vegetables
5. For weeding

- ◆ Give children the opportunity to use tools as and when the need arises for using them.
- ◆ Explain the precautions to be taken while using the tools, well in advance. Give guidance where necessary.

1.2 Simple Farming

Introduction to different types of crops

Our meals include a variety of preparations like *daals*, rice, *chapattis*, *bhakaris*, *usal*, jaggery, sugar etc. We also use oil. The grains, pulses, sugarcane, oilseeds required for these preparations are grown in fields and are called crops. Let us learn about the different types of crops.

Seeds must be sown in the fields to grow crops.

Seeds of different crops are sown at different times of the year. Only when seeds are sown at the right time and climate do we get a good crop. The period of the year when a crop grows best is called its season. According to their seasons, crops are divided into three types, namely kharip, rabi and summer crops.

Crops can also be divided into the following four types

1. Cereals
2. Pulses
3. Oilseeds
4. Cash crops

1. **Cereals** : Jowar, wheat, bajara, rice are cereal crops.
2. **Pulse crops** : Green gram, Bengal gram, black eyed beans, moth bean, broad bean, and other kinds of beans, peas are pulses.
3. **Oilseed crops** : Oil is extracted from groundnuts, and from seeds of sesame, flax, safflower, sunflower, castor, mustard and soya. Therefore they are called oilseed crops.
4. **Cash crops** : Crops like cotton and sugarcane whose produce is sold for cash directly after harvesting are called cash crops.

Besides the above types there are also other types of crops such as fodder crops, horticultural crops and forest crops.

My Activity

1. Write the answers to the following questions.

- i. Name the main types of crops.
- ii. Of which type is each of the following crops?
(a) wheat (b) sesame (c) green gram (d) fenugreek (e) sugarcane
- iii. What is called the specific time for sowing?

2. Visit an oil mill to observe how oil is pressed out of oil seeds and write a description of the process.

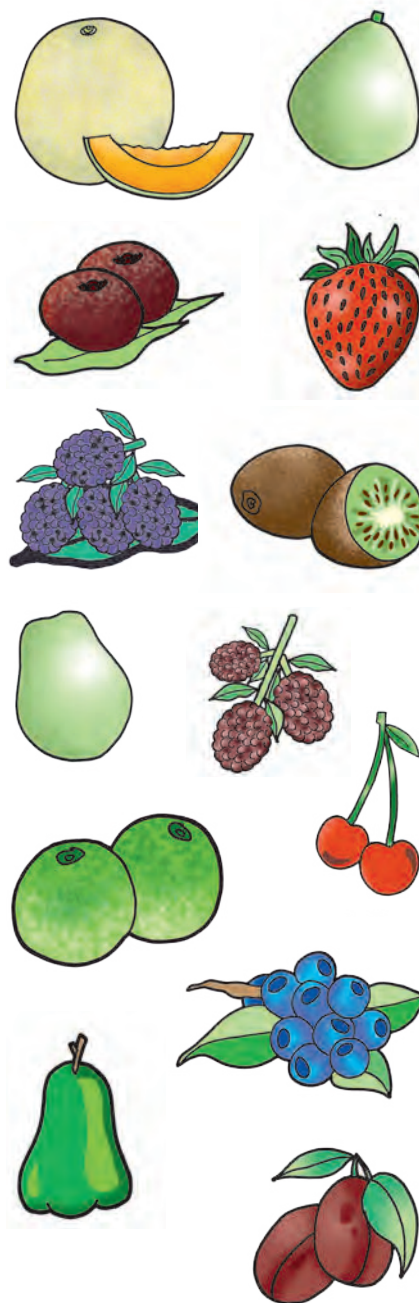
- ◆ Help the children to collect specimens of some crops.

1.3 Fruit Processing

Getting to know some unfamiliar fruits

Each fruit requires a specific kind of climate to grow. That is why we find that all fruits do not grow in our region. Besides, some fruits ripen only in a certain season. They are not available throughout the year. We may have heard their names but we are not easily seen in our surroundings.

Sr. No.	Name of fruit	Colour	Shape	Taste
1	Gooseberry	Orange	Round	Sweet and sour
2	Muskmelon	Greenish peach	Round, rough outside	Sweet
3	Pomelo	Greenish	Round, oval shaped	Sweet and sour
4	Kokum	Deep red	Round	Sour
5	Strawberry	Reddish	Small round tapering on one side	Sweet and sour
6	Mulberry	Black	Round	Sour
7	Kiwi	Rough, chocolate brown	Oval	Sweet
8	Pear	Greenish, white	Oval	Sweet
9	Lichi	Light brown	Round	Sweet
10	Apricots	Yellow	Round	Sweet
11	Wax-apple / Rose-apple	Green, pink	Round, tapering	Sweet
12	Cherry	Red	Oval	Sweet
13	Wood apple	Greenish	Round	Sweet and sour
14	Blueberry	Deep blue	Round	Sweet and sour
15	Bael/Bell	Greenish	Round, oval	Sweetish
16	Plum	Red, blackish red	Round	Sweet and sour



My Activity

Write the names and uses of some of the unfamiliar fruits.

- ◆ If possible, show children these exotic fruits and give some information about them.

1.4 Pisciculture

Introduction to the types of nets used for catching fish

Various kinds of fishing nets are used, according to necessity, to catch fish. The type of net is chosen depending upon the place where fishing is to be done.

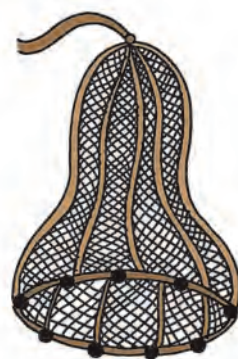
Cast net : This net is round in shape like a cone, tapering to one end and round and open at the other. A 2 to 3 metre long rope is tied to the tapering closed end. Iron or lead shot are tied to the lower border and this part is turned in and stitched up. Standing at a height and holding on to the rope at the tapering end with one hand, the net is thrown into the water with the other. This net is used in shallower waters.

Drag net : This is a very long net. Its mesh size is 2.5 to 4 cm and the width of the net is 3 to 4 metres. A nylon rope is woven into the upper border of the net and floats are attached to it at regular intervals along its length. A thick nylon rope is woven through the lower edge of the net and lead or iron weights are hooked to it. The net is pulled by both ends across a river channel and brought to the river bank. This requires a lot of manpower.

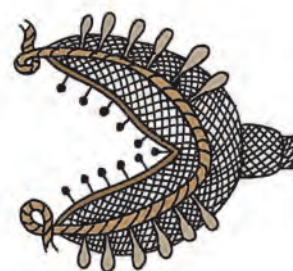
Bag net : A bag net is triangular in shape. Its length may be from 15 to 200 metres. Its mesh size is 5 to 10 cm. This net is fixed in one place across the direction of the current in the sea.

Gill net : Nylon or cotton yarn is used to make this net. Floats are attached to the upper line of the net and weights to the bottom line. The net is kept, fixed vertically like a wall in the water all night. Fish swimming in the water get caught in the net.

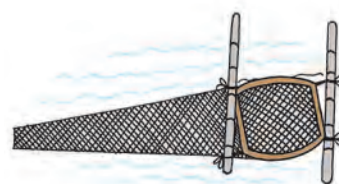
Shore seine net : This is the biggest type of net. Its width is 400 to 500 metres and its height, 10 to 12 metres. The mesh size near the centre is 3 to 5 cm. Floats are attached to the top line of the net and lead weights to the bottom line. A 300 to 400 metres long and 7.5 cm thick rope is tied to both ends of the net. 20 to 25 people are needed to pull this net.



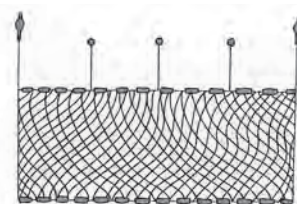
Cast net



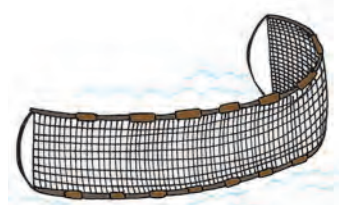
Drag net



Bag net



Gill net



Shore seine net

My Activity

If possible, watch in person, how net fishing is carried out.

- ◆ Explain the precautions that need to be taken while fishing.

1.5 Food Production

Tools required in food production

All kinds of dishes are prepared for eating in every house, restaurant or big industries in smaller or bigger quantities. Let us get to know the tools and devices used in food production.



Sieve : To separate small stones and other rubbish from flours and grains.



Cutting board : To cut fruits and vegetables.



Peeler : To remove the peels of fruits and vegetables like potatoes, gourds.



Knife : To cut vegetables and fruits.



Colander : (Made of cane/ stainless steel/ plastic) To drain the water from fruits and vegetables, etc. after they have been washed.



Kitchen tongs : To lift hot vessels. Kitchen tongs are of two or three types.



Mortar and pestle : Made of steel, stone or brass used for pounding.



Grater : To grate coconut, carrots, radishes, cucumber. There is a special one for nutmeg.

My Activity

All the above implements are manually operated. However, nowadays electrical appliances are used in food production. Make a list of these appliances and make a chart like the one above, showing their names and uses. Collect and stick their pictures in a scrapbook.

- ◆ Give proper guidance for making the list and the chart.

A bhel of mixed pulses

Ingredients and their proportions : $\frac{1}{4}$ cup each of various sprouted pulses such as green gram, moth, etc., 1 tablespoon horse gram, 1 tablespoon tamarind and jaggery chutney, 1 teaspoon ground green chilly, 1 onion and 1 tomato finely chopped, $\frac{1}{2}$ teaspoon chaat masala, salt to taste and for garnishing 1 spoon shev and $\frac{1}{4}$ cup chopped coriander greens.

Procedure

1. Wash the pulses and leave them to sprout.
2. Steam the sprouted pulses lightly. Remove the steamed pulses in a glass or steel container.
3. Add the other ingredients and mix well. Serve into bowls and garnish with shev and coriander greens.



My Activity

Write down the process of sprouting the pulses for making bhel.

- ◆ Explain the advantages of eating sprouted pulses.

2. Area : Clothing

2.1 Producing Cloth

Yarn is drawn from cotton, wool or silk and is used to produce cloth. This process is called 'weaving'. In olden times cloth was woven by hand. Later the spinning wheel was invented. Of all the devices and machines needed in cloth production, the spinning wheel or *charkha* comes first.

The *charkha* evolved very rapidly. There are many types of *charkhas*. Let us get to know the most important of them.

- 1. Khada *charkha* or standing/ upright spinning wheel :** This *charkha* has a wheel of 40 to 60 cm and a disc. The wheel is connected to the disc by a cotton belt. How to spin a yarn with the help of a spinning wheel is still taught at the Sevagram Ashram.
- 2. Kisan *charkha* :** The main parts of this *charkha* are the following : Main wheel, speed, wheel thin string, thick string, spring, disc. This *charkha* has two wheels. The main wheel of 20cm diameter while the smaller wheel which helps to increase the speed of the *charkha* has a 10cm diameter. While spinning yarn the main wheel is parallel to the ground. This *charkha* spins more yarn than the khada *charkha*. This *charkha* is also called 'Yervada *charkha*.'
- 3. Peti or box *charkha* :** This *charkha* is available in various sizes and is fitted in a box. It can be opened or shut with the help of hinges.
- 4. Pravasi *charkha* :** This is a portable *charkha* which can be carried along even while travelling. But the speed of this *charkha* is very less.
- 5. Ambar *charkha* :** This is the newest version of the *charkha*. This has a wooden spinning wheel which can be worked by hand, 4 spindles and 3 pulleys. It has 2, 3 or 4 grooves and each pulley is connected to the main wheel by means of a cotton belt.

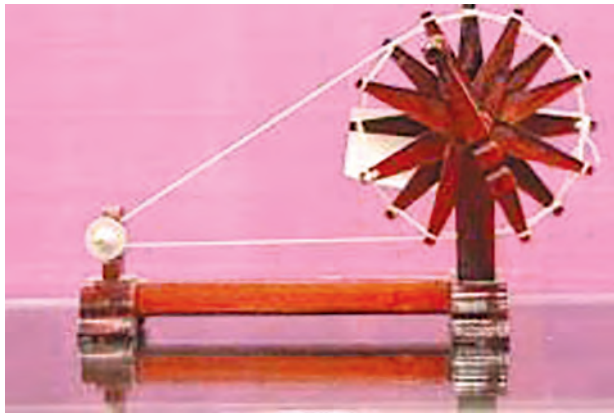
It has an automatic device for wrapping the yarn. Although the yarn obtained using the ambar *charkha* is rough and of ordinary quality it spins four times as much yarn as any of the other *charkhas*.

The importance that Gandhiji gave to the *charkha* as a village industry still continues.

My Activity

Obtain information about *charkhas* by visiting a *charkha* museum or exhibition.
Obtain more detailed information about one of the *charkhas*.

- ◆ Give information about weaving equipment using a *charkha* or pictures/ videos of a *charkhas*.



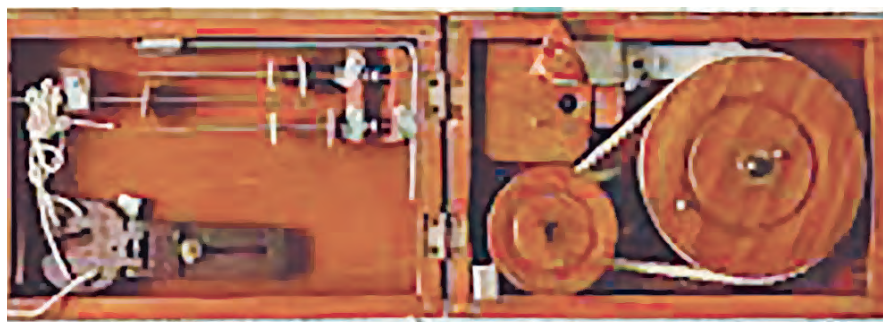
Khada charkha



Ambar charkha



Kisan charkha



Peti charkha

2.2 Basic Tailoring

Stitching a hook on to a garment

We wear many different kinds of dresses. They are made to fit us well, and easy to wear and to take off by the use of certain simple devices such as drawstring, hooks, loops, buttons, etc. Of these the hook is a very commonly used device.

Tools and materials : Cloth, hook and eye, needle, thread, etc.

Procedure :

1. Thread a needle. Bring the two ends of the thread together and tie them in a knot.
2. Place the hook on the cloth in such a way that its round loops are towards the centre of the cloth and the head of the hook is at the edge of the cloth.
3. Pass the needle through the cloth and the loop of the hook so the knot is on the wrong side of the cloth.
4. Now pass the needle back to the wrong side from a point close to the hook's loop but outside it.
5. Repeat these two steps so that there will be several stitches around the hook's loop.
6. Now bring the thread up through the other loop of the hook and repeat the same two steps.
7. Next, bring the thread up one side of the top of the hook and pass it down from the other side thus holding down the head of the hook. Put in 2 or 3 stitches like this, side by side rather than all in the same place.
8. In the end, before pulling the thread tight after the last stitch, pass it through the loop formed by the loose thread and thus tie a knot. Then cut the thread with scissors.



My Activity

Observe an old dress which has hooks. Replace a missing hook by the method described above.

◆ Give guidance where necessary.

2.3 Doll Making

Making a doll from waste materials

Tools and materials : Old plastic bottle, toothpick/ stick, black/ dark brown woolen yarn, old newspaper, coloured paper, glue, decorative baubles

Procedure :

1. Take a medium sized plastic bottle. With the help of an elder person make a hole in the lid of the bottle using scissors points or a nail. Fix a toothpick or any stick in this hole.
2. Take a sheet of coloured paper and fold it into pleats. Stick it in such a way as to make a long skirt for the doll. Stick another paper on the upper portion of the bottle including the lid to make a blouse.
3. Make a small ball using clay, plasticine or crushed paper, or use a table tennis ball to make the head.
4. Stick the black or brown strands of wool on the head to make hair. Draw the nose, eyes, and lips in the proper colours.
5. Roll paper and flatten the roll to make the dolls arms and attach them.
6. Decorate your doll with attractive baubles like sequins, beads, lace and shiny coloured paper.
7. The lid of the bottle is the doll's neck. Remove the lid and fill the bottle with small, dry sweets.
8. Your doll is both decorative as well as useful from waste materials.



My Activity

Make a doll using a coconut shell.

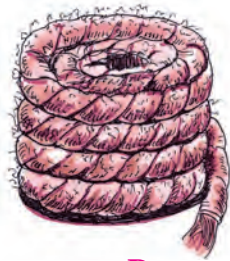
- ◆ Give guidance where necessary.

2.4 Coir Work

Various articles made using coir

When you make a list of the things made of coir, remember to classify them to make it easier to make the list.

1. **Articles of household use** : Rope, string, pot hanger, doormat, wall hanging, decorative articles.
2. **Articles of use in the fields** : Rope, sling
3. **Articles for sale** : Carpet, swing, mattresses, pillows
4. **Other common articles** : Bag, brush



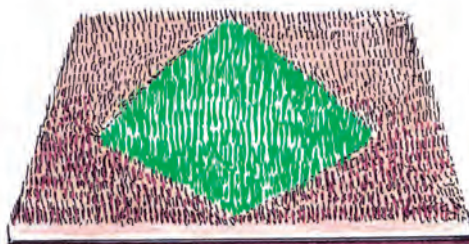
Rope



String



Wall hanging



Doormat



Pot hanger

My Activity

Make a list of the coir articles available in your house.

- ◆ Urge the children to recall the coir articles they have seen, to name them and to make a classified list of those articles. Help them if necessary to do the classification.

3. Area : Shelter

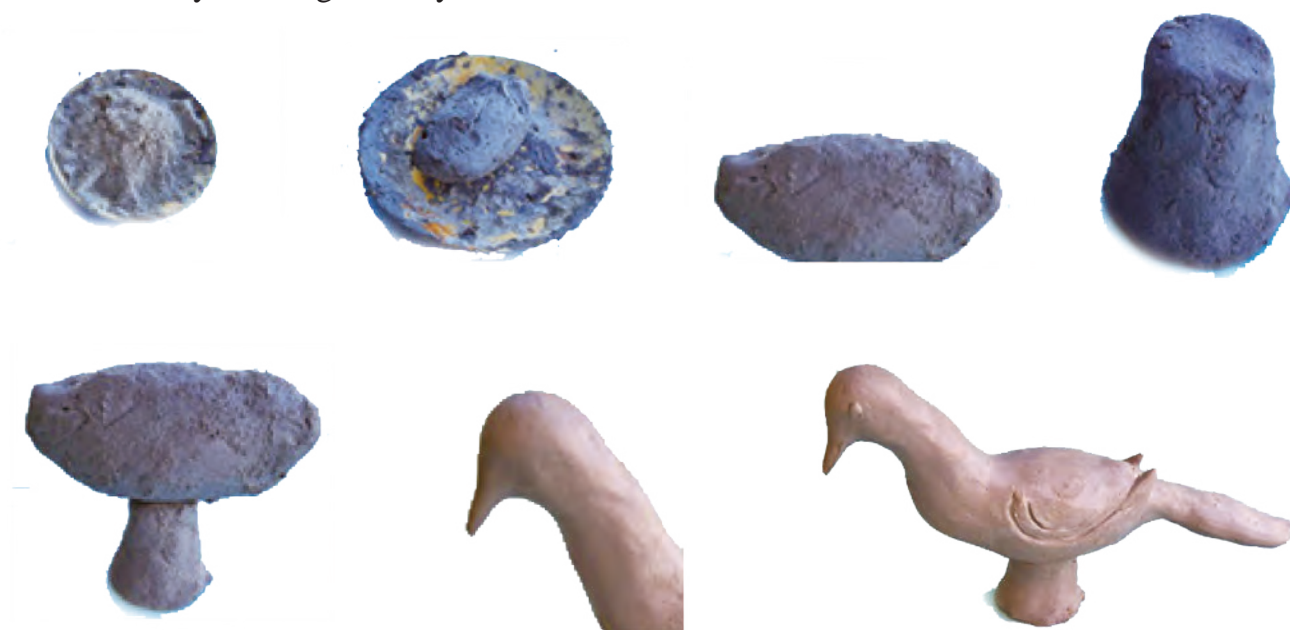
3.1 Clay Modelling

A clay bird

Tools and materials : Clay/ Clay like soil

Procedure :

1. Take some clay. Add enough water and knead it so that it can be shaped into a ball.
2. As shown in the picture shape some clay into an upright stand. Also make the shape of the body.
3. Fix a pin or stick on the top of the base and fit the body properly on top of the base. Prepare the shapes of bird's neck, head and beak.
4. When fitting the bird's head to the body use a thick wire or stick to give support. Make small clay balls for eyes or use beads. Shape some clay into bird's wings.
5. Thus you will get a clay bird.



My Activity

Make a clay model of a tortoise.



◆ Offer help and guidance wherever needed.

3.2 Bamboo and Cane Work

Planting, harvesting and storing bamboo

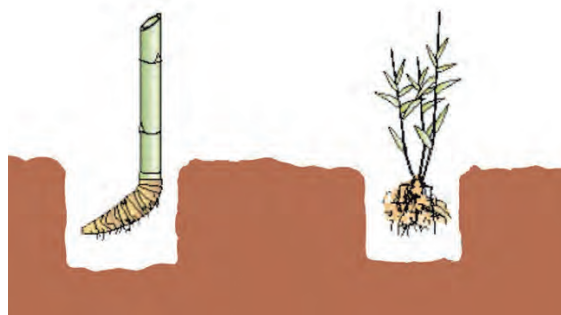
Bamboo can be grown in any kind of soil from the most fertile kind to red, yellow, *murbad*, light, shallow, clayey or sandy soil. Bamboo may be planted on bunds between fields, open spaces around houses, river banks or even hill slopes.

Bamboo may be grown by either of the two methods, namely vegetative or from seeds.

1. Vegetative method : This is the traditional method. Bamboo is grown from an already existing bamboo grove. There are some sub-types of this method.

- Growing the small variety of bamboo having a runner stem.
- Planting one year old culms.
- 1 metre long shoots of the bamboo are planted at a slant to the ground.

2. Sowing a seed : Planting a bamboo by sowing a seed in the ground.



Method of planting : A pit of 30cm × 30cm × 30cm size is dug and the bamboo is planted in the month of June. A distance of 1.5 m between 2 plants and 3 m between two rows is maintained.

Harvesting the bamboo : Bamboo is generally harvested in the months of October or November. The bamboo is cut about 20 to 30cm above the ground. Three to four year old bamboo sticks are quite durable.

Storing bamboo : After cutting, the bamboo sticks are kept upside down. They are soaked in a pesticide. They are kept under running water for a month and then dried in the shade.



My Activity

Visit a bamboo plantation. Observe how the work is carried out there and write a description of it. Study how bamboo is grown in your surroundings.

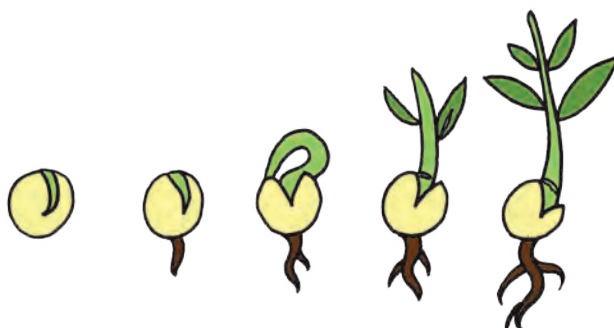
- ◆ Offer help and guidance to the students wherever needed.
- ◆ Arrange a visit to a bamboo farm and give students an opportunity for observation.

3.3 Cultivating Flowering and other Ornamental Plants

Unit : Collecting seeds of flowering plants according to their season and preparing seedlings in the proper way

Dear friends! Flowering and other ornamental plants make our surroundings beautiful, isn't that so ? So let us prepare seedlings of some flowering plants.

1. Collect the seeds of beautiful flowering plants like marigolds, asters, chrysanthemums, babul, gulmohur, bahava, etc. in their season, when they are available. Clean and dry them. Then store them in plastic or paper bags. On each bag, write the name of the plant and the date on which the seeds collected.
2. To prepare the seedlings, fill a small pot or plastic bag with a mixture of soil and organic fertilizer. Sow the seed in it and water it.



My Activity

Sow the seeds and grow the seedlings. Observe the pot every day and write how it grows.

- ◆ Give proper guidance regarding collecting seeds, storing them safely, preparing the seedlings watering them, etc.