GROWING AND EATING VEGETABLES

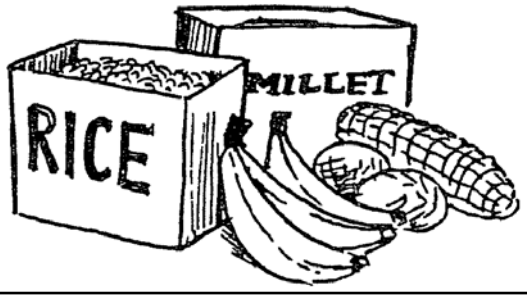
THE IDEA

Vegetables are good for our health. Together with meat, fruit and fresh food, grown in our garden or bought in the local market, they help to make us strong and healthy. For healthy minds and bodies, children need to eat different kinds of food each day, including vegetables. Children can improve their own health and that of others by growing a variety of vegetables, at school and at home.

To be healthy, we need to eat good mixtures of foods

Body-building foods, e.g. beans, peas and other legumes, groundnuts, meat, fish, eggs, milk, insects. Although meat and fish are very rich in protein, we can get enough protein for our needs from plants like legumes, or from milk and eggs.

Staple foods, e.g. rice, maize, millet, cassava, potatoes, bananas.



Protective foods, which contain minerals (e.g. iron) or vitamins (e.g. vitamin A, vitamin C). Dark green, leafy vegetables, like spinach, are rich in iron and vitamins, and orange and yellow fruits and vegetables, like mangoes, tomatoes, berries and carrots, contain many vitamins.

Energy-rich foods, e.g. oils, fats, sugars, sunflower and sesame seeds, coconut cream, avocado pear.

Where and how these activities have been used

Children love to watch seeds grow but nobody likes working for long hours in somebody's garden. Thus this sheet is important and interesting but can also be misused, since one danger of Child-to-Child activities is that children can be exploited by adults to do work which they (the adults) prefer not to do. The great majority of Child-to-Child programmes using this activity are well aware of this danger and, by contrast, give the children who take part in them a lot of interest and fun. Here we give a few examples from many programmes.

In Pakistan children grow tomatoes and spinach in small gardens at school, which are cared for by both older and younger children together. In Kenya, some rural schools encourage children to start gardens at home with support from adults and older siblings.

Although we have grouped foods into staple foods, energy, body-building and protective foods, remember that some plants, such as beans and other legumes, are very rich in both energy and body-building foods.

Some energy, body-building and protective foods are expensive to buy but alternatives can be grown quite cheaply in gardens and containers (e.g. plant pots, old tins, etc.), and may be collected free from the wild, with guidance from adults.

Grow:

- **Staple foods:** cereals, e.g. millet, sorghum, rice, maize and wheat; roots and tubers,e.g. sweet potatoes, cassava or manioc.
- **Energy-rich foods:** sunflowers, coconuts, avocado pears, groundnuts.
- **Body-building foods:** pulses, e.g. peas, beans, lentils.
- **Protective foods:** dark green, leafy vegetables, e.g. spinach, rape, amaranthus, and some fruits, e.g. tomatoes, pumpkins, oranges, papaya, guava, lemon, pineapple and mango.

Collect:

Wild fruits, berries, nuts, seeds, roots, leaves and insects.

Take care, however, and only collect things which are safe to eat. Many people in the village will be able to advise you about the fruits and insects which are poisonous to eat.

Dark green, leafy vegetables, cereals, legumes and meat contain iron which is needed to make blood in order to prevent anaemia.

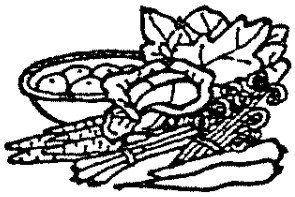
Remember that eating foods which contain vitamin C, e.g. an orange, will help the body absorb the iron from plant foods like dark green, leafy vegetables.

Kumar's story

Kumar and his family lived in a shanty town near a big city. Kumar always felt tired and weak and he looked pale. Kumar went to school but he was too tired to work at his lessons and too weak to play with his friends.

Finally Kumar went to see the health worker who told him that he had hookworm which had given him anaemia, a disease which is caused by a lack of iron in the body.

Kumar does not eat meat very often and does not like green vegetables. The health worker treated the hookworm, gave Kumar some iron pills and told him to eat lots of dark green, leafy vegetables to make himself strong.



Kumar and his family grew green, leafy vegetables in some tin boxes around the compound. They all ate a handful of these vegetables many times each week, and Kumar became stronger and stronger. After six months, he was playing games with his friends. The next year, Kumar was chosen for the football team.

Activities

The children can **visit:**

- Local farms and gardens to find out what vegetables, fruits and cereals are grown there and how many crops a year can be grown of each.
- A local market to find out what crops are sold and where they come from and why some are sold fresh when others are dried for sale.

They can **find out:**

- Which vegetables or fruits grow well at which time of year.
- Whether or not the price of important foods varies with the time of year.

The children can collect a leaf from each of the wild plants growing locally and discuss with members of the community which are the best to eat and why. They can also discuss which are safe to eat and how to prepare them.

Groups of children can **design and display** charts to include all the food plants used within the local community, the ones found at the local farms, gardens and market. They can show which ones are imported from other regions and which grow wild.

The children can **answer the question:** Many people do not eat meat. How do their bodies grow and stay healthy? The children can discuss the possibility of having enough variety of food when they only eat the food crops grown in their village, town or region.

The children can **plan**, with the help of the local health worker or their teacher, their meals for three days using only locally grown food with no meat. Are there any food crops that we could grow in our gardens to improve our diet and make it more varied and interesting?

The children can **discuss** the following questions with their friends:

- Which leafy vegetables have you eaten in the last seven days?
- Which of them grow in your country?
- Do any of them not grow in your country?
- Do small children in the family get them?

They can draw and name the leafy vegetables which grow in their area.

The children can find out from the health worker if there is a vitamin deficiency in the area, and if there are any vegetables or fruits which can be grown to make up this deficiency.

Noah's story

Noah lives with his parents in a village high up in the mountains. The family always eat a lot of rice and some meat and Noah always got his share but his mother never gave him any green, leafy vegetables or any yellow fruit or vegetables. When Noah was five he found it difficult to see in the evening. This was due to too little vitamin A. His sister who was two had measles. She also had too little vitamin A in her diet and, due to the lack of vitamin A and the measles, she went blind.

Green, leafy vegetables and orange and yellow fruit and vegetables contain vitamin A which helps to keep our eyes healthy. Noah's sister needed extra vitamin A because she had measles. She went blind because she ate too little vitamin A.

The children can work with the health worker and find out how many people suffer from blindness and anaemia (ask the health worker how to recognise the symptoms of anaemia) in the community. They can ask questions such as:

- At what age did the person go blind or were they born blind?
- Why did they go blind?
- Are they blind in one or both eyes?
- Is anyone in their family suffering from anaemia?
- If so, which and how often?
- Do they eat red and yellow vegetables and fruits? If so, which and how often?

Growing good food is fun

It is exciting to plan a garden, to decide which plants to grow and to learn how to grow them. It is very satisfying, and healthy too, to eat your very own fruit and vegetables.

BUT to make a garden is a lot of work, so get it right from the start. Invite agricultural extension workers, local farmers, teachers, parents and friends to give advice on how to plan your garden and the best way to grow food plants in your area. If enough people are interested, you could plan a community garden.

Making the garden

Follow these steps:

1 The place

To have a good garden, you need a level sheltered patch of ground, free from rocks and trees, with well-drained fertile soil, a good supply of water nearby, and with enough sunshine and protection from animals.

Answer these questions before you decide where to put the garden:

- Do you have flat or slightly sloping land?
- Do you have soil which is well-drained, deep and fertile?
- What kind of soil do you have? Is it loam, sandy or clay? This will affect the water content of the soil and how it is watered.
- Do you have enough water from a nearby stream, river or well? Plants need water regularly.
- Do you have land which has at least six hours of sunshine each day?
- Do you have land free from large trees and rocks?
- Do you need a fence to keep out goats, cattle, chickens, other animals and people?
- Do you need a place for your garden which is near your house or school, so that it can be easily looked after?

(If you live in a windy place, then your garden will need shelter. If you live in a place where it rains throughout the year, then another source of water is not so important.)

2 The plan

Draw a map of your garden to show: the water source, the fence and nearest buildings. As you move through steps 2–6, you can add to your map the seedbed, pathways, the rows of vegetables, the crop areas, fruit trees, compost heap and tool store, etc.

Ask as many people as possible for advice so that you can decide which are the best food crops to grow. What are the traditional crops grown locally? What are the traditional patterns of cropping? Why? Try to grow crops from each food group. For example, the garden can include maize and sweet potatoes (staple), groundnuts (energy) and beans (body-building), pumpkins, carrots and spinach (protective). Perhaps each group of children can grow some easy and some difficult crops. Crops like pumpkins can be planted a few at a time so that they are not all harvested at once. The planting of the crops can be planned for year-round production, taking seasonal changes into account and times such as the school holidays.

3 The garden

Prepare the garden. If you are using a seedbed this can be done while the seedlings are growing:

- Clear the weeds.
- Dig over the soil, add compost or manure (animal waste).
- Mark out the pathways and rows for the vegetables.

Children can find out about and make the local kind of fencing to protect the garden from animals. What local methods are used to protect seeds and seedlings from birds and other garden pests?

Make sure that there is a good water supply to the garden or all the work may be wasted.

4 The seedbed

Find out where to get the best seeds locally (use local seeds where possible) and which of these seeds need to be planted in seedbeds (tomatoes, cabbage, aubergine and peppers, for example), then begin the preparation.

Seeds can be started in boxes or trays, but seedbeds are the cheapest and work just as well. Carefully prepare fine soil which has been mixed with local compost and well watered. Use the local method of shading seedlings from the sun, which will dry them up.

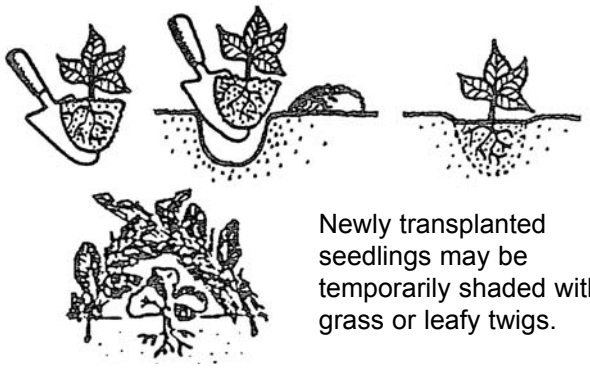
Find out how often the seedlings need to be watered as they grow and the best time of day to do it. It is important to avoid watering

when it is very hot as the water will evaporate but the water should not be allowed to rot the plants. Find out how long they need to stay in the seedbed before transplanting.

This is a good time to study, in biology, how seeds grow into plants!

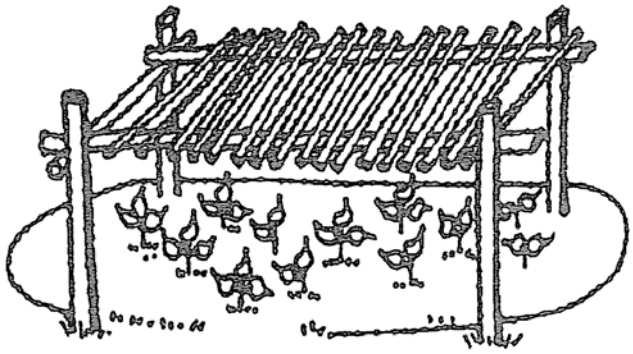
5 Transplanting

Ask for advice on how to move small plants from the seedbed into the garden, i.e. transplanting.



Newly transplanted seedlings may be temporarily shaded with grass or leafy twigs.

Before transplanting the seedlings, children should first find out the local spacing of plants, both in and between rows. Young plants will need both water and shade immediately.



6 Direct sowing and planting

Sow the seeds of spinach, carrots and groundnuts, beans and maize in the garden soil where they are to grow. The larger the seed the deeper it must be buried in the soil.

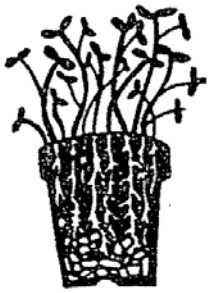
Children should remember the advice given on planting depth and distances. Ask the agricultural extension officer about growing of crops like sweet potatoes from both their root tubers and stem cuttings. What are the traditional methods of planting local varieties of sweet potato?

Ask the agricultural extension officer about crop rotation. What are the advantages of crop rotation and which crops should follow which in the vegetable garden?

Did you remember to put these on your map: seedbed, pathways, named rows of vegetables and crop areas?

7 Plant containers

Many plants, like tomatoes, can grow very well in plant pots, old tins or other containers. The children can collect containers, have holes knocked in the bottom of them and put broken pots or stones in them for drainage. Soil and compost should be placed in the container, and as long as it is big enough for the plant and the plant is taken care of, it should grow very well there.



8 Pest control

The children need to watch out for pests (insects, moths, larvae, slugs, snails, locusts, etc.). An important way of protecting against harmful pests is to make sure the plants are healthy. Some gardeners use poison to kill pests but others do not want poisons on their plants so they pick pests off by hand (give them to the chickens), wash them away with soapy water or plant flowers like marigolds amongst their vegetables. What other methods for preventing insects and disease are used locally? Children can try to guess why pests do not like marigolds.

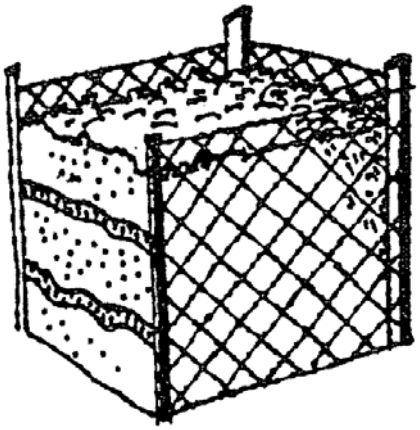
Remember, not all animals are pests. A single toad can eat at least 10,000 insects in one season. Earthworms are very important for the fertilisation of the soil. Many useful insects help the gardener by pollinating plants and eating harmful insects and other pests, so find out which local animals are your friends and KNOW YOUR ENEMIES!

The children can discuss what are the most important things needed for strong and healthy plant growth.

This would also be a good time to introduce the study of some insects and other garden animals in the biology lesson!

9 Food, light, space and water

Plants take their food and water out of the soil through their roots. Plant food can be added to the soil as manure (animal waste), compost (decayed leaves, weeds, kitchen waste, wood ash) and fertiliser (chemicals, which are usually made in a factory). Children can find out about the plant foods used on local farms and gardens. Where do farmers and gardeners get them from?



Compost heap

Children can compare the growth of one seedling in a pot of garden soil mixed with compost with the growth of another grown in sand with no compost. Water the seedlings and see how they grow. What happens to the two plants and why?

Children can discuss what they think would happen to themselves if they, like one of these plants, went without food for one month.

Although young seedlings have to be protected from strong sunlight, green plants generally need light to live, and too much shade is not good for them. Remember that plants, like people, do not like to be overcrowded. If plants do not get enough food, light and water, they do not grow well and become sick and may die.

Mulching is placing grass and plant cuttings on the ground around plants. Is mulching used by local people? How does it help to keep the water in the soil?

Water from washing and bathing is useful for plants grown outside the home. Water, good soil, sunshine and open space all combine together to give ideal growing conditions for many plants.

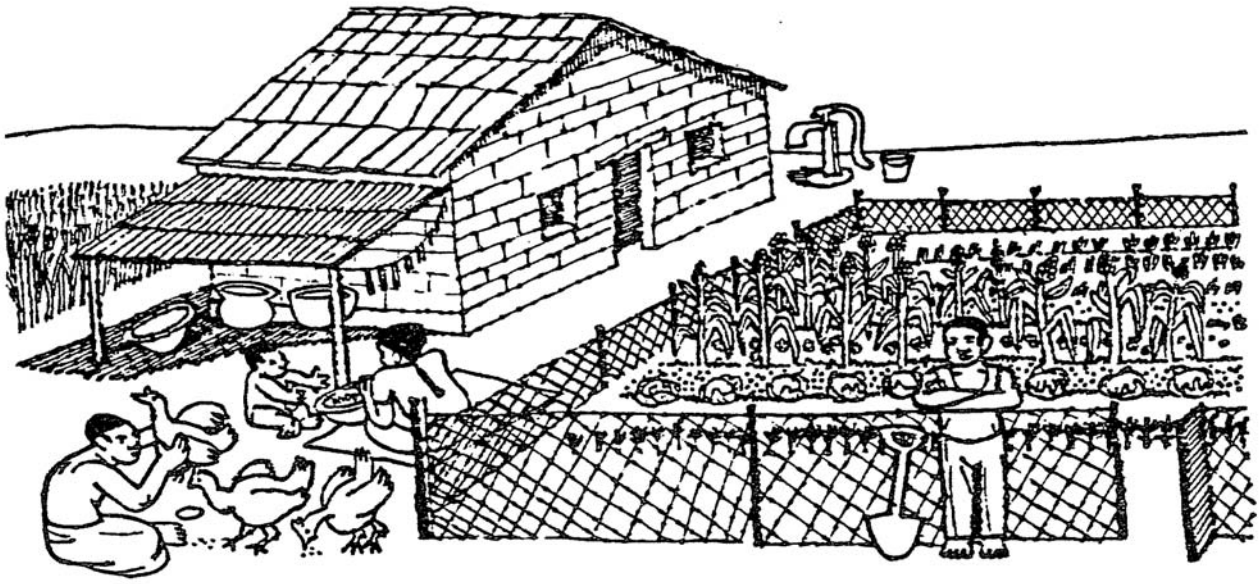
Children can design their own experiment to compare the growth of plants in wet soil with the growth of plants in dry soil. Do the experiment and explain what happens.

Plants, like people, need space, light, food and water to grow well, but they also need to be anchored in the soil. The roots, as they grow down in search of food, air and water, hold the plant firmly in the soil. The leafy stems are able to grow up to the light without the plant falling over.

Plants need looking after

Care for your plants daily:

- Water regularly, give a cool drink.
- Remove weeds, give space and light.
- Keep ‘thinned out’, give more space.
- Put compost or mulch around them, give food and save water.
- Protect them. Look out for pests and diseases. Ask the agricultural extension worker for help.



Remember: Garden tools need to be kept clean and carried carefully to avoid accidents!

10 Picking the crops

The best part – your plants are ready to eat. Harvest them!

Some crops, like tomatoes, can be picked just before they are ripe. You are then sure to harvest them before the thief! Most fruits continue to ripen after being picked. Investigate how each crop is picked and treated after picking. How are they traditionally stored? The extension worker should know the best methods of storage. This is very important as it allows the food to be eaten throughout the year.

Follow-up

Children can be asked, after several months, to discuss with the other children what they have done in their gardens and what they would like to do next.

A competition can be organised to judge the best school garden, house garden, plants in containers or vegetables.

A display can be mounted of the vegetables and fruit grown. Plant and develop more gardens.

Celebrate a harvest festival!

Remember!

- Grow crops in containers for fun, decoration and food!
- Grow a fun plant, sugar cane, bananas, coffee, paw-paw, etc.
- Grow a selection of herbs for use in cooking, perfumes, medicine.
- Plan a menu for the day and cook a ‘balanced meal’ from the food grown.

USING THIS SHEET

Some of these activities can be used with younger children, some with older. They can be introduced by agricultural extension workers at a school or clinic, by teachers, guides, scouts or other youth leaders and by community or pre-school workers.

This Activity Sheet should be used together with Activity Sheets 2.1 and 2.2 **Feeding Young Children 1** and **2**.

BREASTFEEDING

THE IDEA

The natural food for babies during their first months of life is breast milk. Sometimes cow's milk, powdered milk or other liquids are used instead, but breast milk is the best food for babies for the first four to six months after birth. It contains everything that babies need to grow well, and helps protect them against many diseases. Babies who only receive breast milk have fewer illnesses and are better nourished. Breastfeeding keeps mother and baby close. This closeness helps children develop as happy and secure people.

Extra food is needed once a baby reaches four to six months, but breastfeeding remains very important and should continue if possible until the baby is about two years old.

Children can teach each other about the importance of breastfeeding, and help mother at home while she is breastfeeding younger ones.

Breast milk

Breast milk alone is sufficient for the first six months of a baby's life. No other food or drink, not even water, is usually needed during this period. Animal's milk, instant formula, powdered milk, tea, water, sugar drinks and cereal foods are inferior to breast milk. From about four to six months, additional foods are needed, but it is valuable and important for breastfeeding to continue longer than this, even up to two years. Usually children no longer want to breastfeed beyond this age.

Breast milk is best!

Where and how these activities can be used

This sheet is best introduced as part of a community project where children work alongside the parents and other adults. It is particularly useful in the way it can be used to promote discussions, role-play and the analysis of advertising messages. Although few countries still allow advertisements promoting bottle-feeding, there are often misleading advertisements about baby weaning foods which deserve to be critically examined.

It is vital when children discuss these issues that they learn to understand different points of view, and explain how breastfeeding helps children to grow up healthier and stronger without condemning mothers who do not breastfeed. The influence of men in promoting breastfeeding is just as important as that of women, and a new Child-to-Child reader, **Uncle George Feeds his Baby**, helps to emphasise this point. In certain cultures there may be some resistance against using this excellent sheet. In most cases a simple change of language may be enough to make the topic acceptable. If we talk of 'mother's milk' or 'mother feeding her baby', objections are overcome.

Remember that all children, girls and boys, need the benefits of breastfeeding. In traditional families, mothers naturally fed their children. Now, as families grow smaller and many women work, there are many pressures on mothers to bottle-feed their children instead. This can seriously affect babies' health. If all babies were breastfed for the first six months of life then deaths of more than one million infants a year would be prevented.

Some common problems that mothers and babies experience when first breastfeeding include:

- The child may need help to take more of the breast into the mouth.
- The child may need more frequent breastfeeding and possibly even 12 feeds during a 24-hour period. The baby should suckle for at least 15 minutes.
- The child may not drink breast milk if they are unwell. In this case, they should be taken to a trained health worker.

Why bottle-feeding can be dangerous

Cow's milk and formula (tinned, powdered milk for babies) are different from breast milk; they may contain too much of some kinds of food, and not enough of others. Studies have shown that babies who are bottle-fed die from diarrhoea much more often than babies who are breastfed. They also get more chest infections. Feeding bottles often contain germs which can make a baby ill. If the feeding bottle is left uncovered for a few hours, particularly when it is warm, it attracts flies and the germs breed and can cause the baby to be ill.

The first milk or colostrum

For the first few days after a baby is born, the mother's breasts produce a special kind of milk called colostrum. Colostrum is yellow, and there is only a small amount of it. Colostrum protects the baby against germs that may cause diarrhoea and other infections. It is the first immunisation the baby gets after birth. Sucking colostrum prepares both baby and mother for successful breastfeeding. There is usually no need to give extra drinks before the milk comes. Sometimes mothers are advised not to feed colostrum to their babies. **This advice is incorrect.**

Breastfeeding at home

Babies need to be close to their mothers and to be able to suck, whenever they need a feed, day or night, and wherever their mothers may be. Other people should support and encourage mothers in this and not make them feel embarrassed. If a baby is breastfed whenever it needs a feed, there is no need to give extra bottle feeds with the risk of diarrhoea and other illnesses.

Often babies who are bottle-fed are not fed by their own mothers. Therefore they lose some very important contact with them and bonding opportunities.

While breastfeeding, mothers need extra food and liquids to replace the food used up to make the breast milk. They also need extra help with housework because a new baby requires a lot of attention. A tired mother may not produce enough breast milk. The other children can help with some of the housework so that the mother has more time to look after the new baby. They can also make sure that she is getting enough to eat. If they help their mother and show that they are pleased about the new baby, this helps her to breastfeed successfully.

When breastfed babies are ill, breast milk is still the best food for them and should never be stopped. It is even more important in helping recovery.

Sucking from the breast and bottles. Sucking from a bottle is different from sucking from a breast. If a baby sucks from a bottle, he or she learns to suck in a different way and may find it difficult to suck from the breast, or may not be hungry enough to suck the breast. If he or she does not suck enough at the breast, the breast milk will dry up. This explains why bottle feeding can cause loss of breast milk and malnutrition.

Breastfeeding and child spacing

When mothers breastfeed, they are less likely to begin a new pregnancy.

Thus breastfeeding for a longer time often contributes to longer gaps between children in a family. Children from families with three-year intervals between the children are taller, stronger and do much better at school.

Activities

Finding out

There are many interesting and useful things children can find out.

About customs and practice

The children can find out if they were breast or bottle-fed. If they were breastfed, at what age were other foods introduced? Why was breastfeeding stopped? Is there a local tradition about how long breastfeeding should continue? The children can discuss their findings.

They can then investigate some breastfed babies to see for how long they are breastfed. Are some babies only breastfed? Are some both breastfed and bottle-fed? Are some only bottle-fed? How many in each case? What reasons do the mothers give for introducing bottle feeds? What are their first foods other than breast milk? How do the babies respond to the change? Do they continue to breastfeed after they start to take other foods? When do they stop breastfeeding completely?

They can ask:

- What do mothers do on the first day, with the 'first milk'?
- Do they believe it is good for babies? (It is!)
- Do they give other drinks? (They need not do so!)

About the cost of bottle-feeding

Children can find out from the health worker what milk powders are most commonly used locally to make up feeding bottles for babies. Get a tin of milk powder and discuss with the children the instructions for making up the feed.

Help the children to calculate:

- How long a tin lasts when a baby is fed according to the instructions. For example, to feed one baby for a year requires 40 kilograms (about 80 tins) of infant formula.
- How much it costs to feed a baby on milk powder for a week, and compare this with what families earn.

Are there other costs (e.g. for bottles, teats, firewood)? Discuss what can happen if families cannot afford this money. All this can be linked to learning mathematics.

Are the instructions on the tins in the local language? Are they clear? Are there advertisements for formula milk in the shop? In the local clinic or health centre? What do they say? Is it true? If there are any advertisements for formula milk in the local health centre, the children can ask the health worker if they can replace them with their own posters encouraging breastfeeding.

Understanding about breastfeeding

- Find posters about breastfeeding. What do they say?
- Design your own posters. How would you convince someone that breastfeeding is best for babies?
- Pretend you own a company which sells expensive powdered milk. How would you persuade people to stop breastfeeding and buy powdered milk instead?
- In many countries, advertisements for powdered milk for babies are no longer permitted on radio or television, or in public places. However, there are many advertisements for prepared supplementary foods for babies. These are usually expensive and are no better than home-made foods. Advertisements may also encourage mothers to introduce these foods far too early.
- Now find posters or adverts on radio and T.V. which advertise formula (powdered milk) or supplementary foods for babies. What do they say? Where are they shown?

Songs, drama, stories

1 **Write songs** about breastfeeding. Sing them.

2 **Drama and puppets** Make your own plays comparing what happens to breastfed and bottle-fed babies. Before making the plays, talk about why people do not breastfeed children. Why do they stop? Remember, there are many reasons why mothers do not breastfeed babies. Try to use your drama to show these, and why they may not be good reasons.

3 **Stories** Make your own stories and illustrate them. Here are two outlines for stories. Use the information you have collected about feeding young babies to make the stories last longer.

> Two mothers have babies; one just breastfeeds and one gives extra food and water from a bottle which she forgets to keep clean. Why is her baby ill? She can't understand.
> A mother decides to give bottle-feeds because it is 'modern' and she wants to go out frequently. She leaves the feeding to a child-minder who doesn't understand how to mix the formula and keep the bottle clean. The baby gets very ill and nearly dies.

Finish this story:

> Mrs A went to hospital in the town to have her baby and stayed with friends afterwards. When she came back to the village, she said, 'I've been told that "Wondermilk" makes babies big and strong. They gave me a free bottle in the hospital. So I'm going to feed my baby on "Wondermilk". It's better than breastmiik.'
>
> 'But we are very poor,' said her husband.
>
> 'No,' said Mrs A. 'This baby must have the best!' So she went to town ...

4 Campaigns

Join with your friends and family in campaigns to promote breastfeeding and breastfeeding support groups.

Keep babies healthy – Breastfeed!

Observation

Difference between breastfeeding and bottle-feeding

Let the children look at a picture or at a baby being fed, or discuss what they have seen when their own little brothers or sisters were being breastfed. Note how happy and close to the mother the baby is. Can they see any differences between breastfed and bottle-fed babies? If they were a baby, which would they prefer?

Action

Children can:

- Help mother when she is breastfeeding the baby by amusing other children.
- Help mother by doing jobs to give her time to rest.

- Help feed the baby when baby starts eating other foods.
- Check how often the baby is fed every day. Write out recipes for baby foods and give them to neighbours with young children.
- Know how to prepare different kinds of baby foods and help a relative by feeding the baby
- Put on a play that tells how baby got diarrhoea from bottle-feeding, and present it to the neighbours.

Follow-up

Can children list the advantages of breastfeeding?

Do they know what the national campaigns are telling mothers?

Have they found out why cow's milk is not the same as breast milk, and why formula feeding is expensive and likely to give diseases?

Do they know how many children in the neighbourhood have had serious diarrhoea, and how many have died? (See Activity Sheet 6.1 **Caring for Children with Diarrhoea**.)

Have any of the children helped their mothers while they were breastfeeding?

USING THIS SHEET

All children, even little ones, can become interested. The sheet can be used at schools, youth groups and in training teachers and health workers. Boys as well as girls should learn these things and do these activities.