

Organic Gardening and Composting

By Chris Summerville

Introduction: As part of the 2008 Life Skills Program at Sahyadri School, forty students from Grade 7 were introduced to the basic concepts of organic gardening. Students were divided into eight groups consisting of five students and each group was expected to prepare and plant seeds in their own small plot over the course of two mornings during five class periods from 8.50 am to 12.30 pm. An area of fallow land had been set aside for this activity and two anchors along with five other volunteer teachers were scheduled so that one teacher was present to guide and assist the students at all times.

Learning Objectives: **i.** To offer students the opportunity to actually plant, tend and harvest some of the vegetables they consume in their daily lives and thus become more familiar with the process of food production. **ii.** To learn about some of the techniques and benefits of organic gardening and consider this method of vegetable production compared to conventional, chemical farming. **iii.** To reflect on and document the decisions and methods they made and followed during their two-day session in a form that can be shared with their peers and teachers.

Explanation of Activity: Each two-day session followed the schedule below:

Life Skills Program 2008- Kitchen Gardening and Composting

Anchors: Shino and Chris *(Note Comments and Suggestions at end of report)*

Teachers: Soumya, Neela, Prabhat, Suchandra, Bipassa.

Twelve Steps of Kitchen Gardening and Composting

Day 1.

1. Take tools/seeds and other items up to the field.
2. Plough the plot.
3. Remove Stones and Break Lumps. Make sure that there are no stones or lumps.
4. Sift the vermi-compost and separate worms and casting.
(Please try not to put any worms in the plot. Please keep them in the vermi-bin.)
During this time, explain about the vermi-compost.
5. Wet the plots well. Water all the plots with a sprinkler.
(Clean off all tools and return.)

Day 2.

Students will gather at C&S's house and have an introduction to our small kitchen garden and vermi-compost.

We will also be

- a) Looking at the Planting Chart of local farms
- b) Showing and talking about seeds

↓ Move to the field.

6. Plant the seeds.
7. Identify type of seed with label/stick with date planted.
8. Water all the plots with sprinkler.

(If sprinkler is not available, water with a hose gently so that seeds does not get washed away.)

9. Check and maintain the previously planted plots.

(Weeding, culling, and mulching as soon as the shoots are grown tall. Also when the beans are grown, put the sticks for the support)

Annual Planting & Harvesting in Sahyadri Area



Extra time

1. Show the VCD on Organic farming by Agro India.
2. Go for a walk along the *parikrama* and share what we can see and how much/little we know about the activities we see in the fields below and what is being planted/harvested.
3. Share stories about farming, growing things, food, vegetables etc. Bring an instructional article or story.

**The tree in front of the Guest House is a perfect shady gathering place!!

Scenes from the Organic Gardening Program





Drying food peelings for vermi-compost



Sifting vermi-compost to separate worms



Preparing soil & spreading compost



Choosing our seeds!



Our Planting Dance!!



Students' Comments

Kitchen gardening was really fun as part of the life-skills program. It was wonderful making a dry piece of land full with a variety of colours. It was an amazing experience of learning a little about the growth and life of vegetables. Not only does the soil need nutrients for its strength but love is also the most essential thing! We also got the idea of where to position the plant because of the sun or its needs and size. It was quite hectic in the beginning because we aren't used to such hard work and we had many difficulties to face but our teamwork reduced them. This experience taught me not only about soil and vegetation but also about life and death. (Maitreyi)

I really liked the organic gardening. It was like working on a small part of a field. The feeling of the soil was just like the soil on a farm. It was fun planting the seeds and being an organic farmer! We thought about how much water to use, how the soil should be mixed with compost and where we should plant our vegetables. It was hard working in the hot sun. I planted beans near the sunflowers so they could have support to grow and put the coriander on the other side so they could be shaded because they don't like to much sun. (Dhanraj)

It was a wonderful and amazing experience to learn organic farming during the life-skills program. I always felt gross and scared to catch earthworms before but after this experience I now feel very close to worms. Though it was very sunny we had a lot of fun preparing our little field by breaking the lumps of soil into fine soil. I got more familiar with compost and growing seeds as well as transplanting saplings. I tried to help the seeds in their new surroundings by putting sunflowers around the coriander so they will protect them from the sun when they grow older and tall. I loved using the sprinkler to water the plots and I also liked separating and feeding the worms as we were sifting the compost and sowing. I want to do organic farming at my house and make my friends and family familiar with this process. (Aishwarya)

It was excellent being with my teachers and doing organic farming. I thought it would be boring but it was fun! I will use the tips which I learnt in the future when I start a farm for my small family. I much prefer organic farming to using chemicals. (Sandeep)

In these two days I was introduced to farming and tools, soil, and how to sieve earthworms to get good compost. I really enjoyed getting the compost sieved and spread a lot! It was a completely different experience for me and being in contact with the earth was wonderful. Getting a hand with the tools and using them was also great! Doing the vermi in the hot sun was a bit tiring but it was OK. (Paridh)

I really enjoyed kitchen gardening though it was very tiring for me. It was interesting to know all the precautions you need to take like too much sun or not enough water for a certain plant. The solutions were also very interesting and simple, like for a short plant that cannot take too much sunlight you just grow a taller plant near it. I found out that organic farming isn't as difficult as people think it is. The video about organic farming was very interesting! (Meghana)

Kitchen gardening was my favourite activity during the life-skills program and I really enjoyed it. I preferred the second day to the first as on the first day we did a lot of work and sometimes my hands started aching. When we first touched the worms I felt it was disgusting and gross but then I got used to it. Now I can touch the worms and realized it was a great experience. I felt so happy when I planted the seeds and felt that I was growing them for the future generation. I felt a little lazy to plough my field but when Shino explained how the seeds grow I knew how important it is. I understood that the soil doesn't need chemicals or pesticides to make a plant grow. I think we all need to actually grow crops to understand this point. Thank you for such a good experience. I will never forget it. (Anu)

I really liked kitchen gardening. It taught me how to plant crops. It taught me the basic things for organic farming. We sifted the vermi-compost and got more familiar with worms. (At least I used to think it is gross to touch them!). It was fun learning everything about gardening. It also taught us how to use different kinds of tools. It was truly a lifetime experience for me! (Kanak)



Selecting our seeds!



Grade 4 – Future organic gardeners!

Comments and Suggestions for Anchors/Teachers **Of** **Organic Gardening Life-Skills Programme**

As with any outdoor activity, preparation and flexibility are the keys to a successful gardening programme, as is giving the students proper guidance while leaving them the space to come up with their own ideas and to learn from their mistakes.

Keeping the balance between offering the students a positive and enjoyable experience while at the same time helping them realize that essential methods must be followed in a disciplined and cooperative way for the vegetables to grow is the challenge that teachers will face - as they do in any activity involving young students.

Joining in with the work rather than just directing as well as allowing individual students to take the lead while continuing to suggest, advise, ask for opinions and share your knowledge and insights will create the atmosphere that you are all discovering the wonders of working with nature to grow food together.

Realizing that some students will eagerly take to this activity while others will need time and recognizing the pace of various students differs is as important here as it is the classroom.

Recognizing when to let students work alone and when to encourage them to work in pairs or as a group is also important so that individuals are engaged, sharing the work and understanding that this is their plot of earth and that they can all contribute to helping it to yield a good harvest of vegetables.

Encouraging the students to find tasks that they enjoy and to stick to and focus on them as well as to try out some of the other necessary steps even if only for a short time will help all students to enjoy at least some parts of the process, to find what they have to offer and possibly to get over any prejudices they may have about farming, soil or worms!

Creating a plot that is divided into individual sections allows each group of students to feel a sense of individual 'ownership' teamed with a larger holistic and collective sense of purpose and pride.

Obviously the four **essential** ingredients to a successful organic gardening programme, besides an appropriately located and sized piece of land and the blessings of decent weather, are: the correct tools, enough in-season vegetable seeds, a reliable water supply and a sizeable amount of compost. It is also good to prepare or have students make their own small durable signs on which they can write their names and mark which vegetables they planted in each plot along the date, and some strong poles and string (or fallen branches and rice straw if enough is available) to support any vine vegetables you may plant.

The four **essential** stages which students must be helped to recognize as being equally important for the success of organic gardening are: proper preparation of the soil by breaking down large lumps and removing stones, mixing in a suitable amount of compost, selecting seeds and planting them at appropriate distances and depths, and adequate watering.

It is important to try and instill in the students a sense of respect for the tools and to show them ways to use these tools efficiently and cooperatively. Students should be reminded that one of the ‘golden rules’ of gardening, both for their own safety and to make sure these tools can be used for many years, is to always make sure that they do not leave them lying about in the field but to place them off to the side when not in use and to clean them off properly and replace them in a chosen storage place after they have finished the day’s work.

If possible, it is advisable to search for a source or sources of organic seeds so as to avoid using hybrid ones which are often coated in poisonous substances. Packets of such seeds which are often manufactured by multinationals and contain printed warnings can be used as teaching tools and compared in size and colour with any locally available seeds.

We found that making circular plots and dividing them up into sections according to the number of students in each group with a narrow ‘walkway’ between each allows a sprinkler to be placed in the centre and creates a closer sense of working together than does a long rectangular field. Such circular plots are also aesthetically appealing and lend themselves to certain permaculture principals along with the movement of the sun.

Using mulch to help the soil retain moisture as well as to slow down weed growth is a good way of demonstrating a means of working with nature by using readily available natural materials to our benefit while saving water at the same time.

Students are encouraged to return regularly to their plots and help maintain and hopefully harvest their crops for the remainder of the term. If their initial enthusiasm appears to be waning a few weeks or sooner after the life-skills programme is completed it is a good idea to organize a core group of willing volunteers and allow others to join when and if they please.

Proud Farmers!



Obstacles Faced and Overcome

- i. Since we are situated in a remote area it often takes a lot more time to secure basic supplies than it would at a more centrally located school. Thus, we found ourselves without the required tools during the first days of the programme and limited to a small selection of seeds that were available locally. We overcame this problem by borrowing various tools from teachers and making an appeal for teachers to share any spare seeds they had lying about in their houses. It is recommended that seeds, tools and the area to be farmed are all secured and prepared at least two weeks before the course

begins as they are obviously the essential ingredients for the course to even be carried out!

- ii. We found that it was getting very hot by the fifth period (11.50 am) each day so it was decided to show the organic farm video during this period on the first day and to have the students discuss the 'Planting and Harvesting' Chart, look at the organic seed catalogue and write a personal reflections essay on the second day so they could come in from the heat in which it was too hot to plant or water properly anyway.
- iii. Since the plots needed to be watered in the afternoons, we needed to request that students return at teatime even though the programme was over by 12.30pm. A number of them inevitably forgot or were late turning up, so for the second week this duty was included on the schedule thus making it a more 'official' responsibility!

Follow-up Lessons

One of the stated objectives of this activity was to allow students to share their experiences and to 'teach' what they had learnt to their peers and elders. During one follow-up eighty minute period, the students divided into their original eight groups and selected a representative who they felt could best articulate their group experience during the two-day organic gardening session. I wrote the following categories on the board: **Soil, Field: Shape & Size, Compost, Seeds: Selection, Depth, Spacing, Companion Plants, Cover Crop, Mulch, Watering, Random observations** to help guide their discussion. Students used these categories to brainstorm and wrote down all the details which they felt needed to be shared in an educational setting.

I accompanied the eight representatives to their fields and we identified the shoots they had planted at their various stages of growth (along with a number of 'guests' who had come as seeds in the compost!) and shared various ideas regarding the logistics of that afternoon's teacher tour. Students decided who would introduce the work area, the compost and the tools and decided to break up into two groups for the tour, with each 'team' of four introducing the teachers to four fields as opposed to all eight to avoid a crowded area and repetition.

Scenes from the ‘Teacher’s Class’



How the area was before the program



Sharing what we planted and where



Question and answer time



Talking about mulch and cover crops

ii. After the success of the ‘teacher’s tour’, (see details below, in ‘Outcomes Achieved’), the next step for the representatives of Grade 7 was to share what they had done and learnt with the members of Grade 6 who will take part in the Life-skills Organic Gardening Programme in 2009. Arrangements were made with various subject teachers to allow the representatives to be absent from their classes so that they could lead the two sections of Grade 6 around the farmed area during the latter’s EE classes. The four members of Class 7a led the twenty members of 6a on one morning while those of 7b led the students of 6b the following day. This time, the representatives decided they would show the students all eight fields, starting with the ones that had been planted recently and moving along to those that had been planted three weeks earlier so that students could see the process of growth and change which had occurred during this time.

It was decided to develop a worksheet which would be filled out in the second period of the eighty minute block with each of the four representatives working with and guiding a group of five sixth grade students.

Organic Gardening Worksheet

Grade 6

NAME:

1. What are the five key steps of organic gardening?
2. What is vermi-compost and why is it good for the soil?
3. What are some of the vegetables you observed today?
4. On the back of this paper, draw three of the vegetables you observed today and write about some of their characteristics.
5. Why are the small plots covered in dry grass and what is this called?
6. Explain the meaning of 'companion planting' with some examples.
7. List three of your favourite vegetables. State: **i.** If they grow above or below the soil. **ii.** When they are planted in this area. **iii.** How long they take to grow before we can harvest them.
8. What are some of the differences between organic farming and conventional farming?
9. Why do think most farmers are doing conventional farming today?
10. Add any comments, questions or ideas you had after today's tour.

Scenes from Grade 7b Introducing Organic Gardening to Grade 6b



Reflections of Grade 7 Representatives

I had a great experience taking the 6th standard students for a tour of our organic gardening plots. They were very cooperative! I found it easy to explain things to them probably because they are younger than me. I did, almost, feel like a teacher! Explaining about the vegetables, clearing up their doubts, seeing that they did their worksheets properly – all of this was fun. I learnt quite a lot myself, too. Before, I never had a clue about what companion planting, mulching or cover crops were all about. Even I didn't really know about vermi-compost. I thought it was just a soft soil. I was really surprised to know that none of the vermi-compost is actually soil! I was so happy to actually have a chance to share all these things that I had learnt in front of the 'children'! It was a lot easier than the tour with the teachers. I feel proud of myself now that I know quite a bit about organic farming. It feels good to share some of this knowledge with others. I hope we can have more of these tours and I would be delighted to take one more tour of either 5th or 8th standard. (Priyanka)

When I heard that I had to teach 6th grade about organic farming it was pretty exciting! I started practicing what I was going to say the night before and it hardly took any time since I had already learnt a lot of things earlier when I was actually doing it. Explaining to the sixth about organic farming went smoothly and I think they understood everything we said. Though I had a little difficulty when they were asking questions coz once in a while I had to ask my friends (who were also 'teaching' along with me) what the answers were when I didn't know. At first the 'students' response wasn't really positive as they seemed slightly disinterested and distracted but as we started explaining more stuff they seemed to get into the whole experience and I think they looked keen on doing organic farming next year. Teaching them was a great experience for me! (Anamika)

My experience of being a teacher was really nice but difficult. Explaining things about organic gardening is a lot easier than doing it though! The 6th Standards were very co-operative and nice and they asked a lot of questions. It made me feel good that they found whatever we said interesting. It was a new experience and I should say one of the best I have had at our school. This was the first time I have been a teacher and I felt extremely happy. Sometimes, being a teacher you can learn a lot of things from the students and that is what I like. I don't like teachers who just keep on talking and talking. I would love to be a teacher again. (Tejal)

My experience of being a 'teacher' of organic gardening was great! I now understand what pain the teachers have to take even before explaining the simplest of things. Before holding our class with the sixth grade, all four of us prepared what we would say. We were all very excited and decided to take topics that we felt comfortable with. Earlier, it had been very easy on the teacher's tour as they were old enough to grab the things we told them quickly, but now we were going to be sharing with really young minds. We also had a rehearsal amongst ourselves just to know we could present the topics in a fluent and understandable way. The students easily accepted us as their teachers and we decided to take them by the long route as

we had done with the teachers so that they could get a clear step by step image of how the plants grow and change over time. I felt a splash of happiness running down myself throughout the class and also observed and learnt more about what I had done in the process of sharing my experience and explaining it to others. (Vinit)

This experience was a very unique one for me! I had a chance to share what I am interested in and have learnt with my juniors as a teacher. First, we showed them the poor condition of the original soil that we had to work with and slowly moved along from the most recently planted field to the one that had been planted over three weeks before. This showed them the various growing stages of the vegetables we had planted such as mustard, red clover, sunflower, coriander, tomato and beans. We discussed how many of us could actually be farmers and realized the difficulty of growing food. Both the teachers and the students we led seemed to enjoy it and so did I! (Pruthav)

Outcomes Achieved

Along with the eco-tour activity, the Organic Gardening Project has helped our campus move forward on the path to using our immediate surroundings as a lesson tool in what can be called ‘place-based’ education. I hope that organizing ‘teacher tours’ for both activities has generated some interest among the teachers of other subjects about how these so-called environmental activities and infrastructures can also be exploited in their subjects, be they Math, Science, Art or Language, to increase student’s knowledge in these areas while connecting them to their environment at the same time. By asking students to prepare material and presentations to share their gardening experience with their peers and elders in an educational setting, I feel both the student-teachers and the students have gained a sense of empowerment and confidence that their learning experience can be directly connected to their daily lives and surroundings and that in many instances what they learn from their experience is a valuable teaching tool for which **they** are the teachers!

Future Plans

The principal has shown an interest in creating space in the school day for organic gardening to be carried out year-round. We have made contact with the Maharashtra Organic Farmers Association (MOFF) and they have expressed a willingness to come to our school and offer organic farming workshops and guidance both to teachers, students and the local farmers who are employed in various positions on our campus. In this way at least some of our future daily food consumption could be locally grown and organic!