

Botany in the Classroom

A Video Documentation of Science Literacy Workshops and
Classroom Follow Up Activities.

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Northeastern Illinois University's College of Education
Chicago Teachers' Center

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Chicago Teachers’ Center

Laura Amaro, teacher, Grade 3
William H. Seward Community Academy

Frankie Sanders, teacher, Kindergarten
Mary McLeod Bethune Elementary School



Overview
by Elfriede G. Pergams

This video shows Ms. Sanders and her Kindergarten class engaged in grant-based science activities both in- and outdoors.

In the classroom, Ms. Sanders engaged her students in both hands-on science investigations as well as science-based art activities. When the class visits the school’s grounds, it is to investi

gate what kinds of living things , and how many of them can be found inside the rope circle, and then to make tally marks for each; and to learn how to plant a tree, and plant it together -- a tree that will grow so tall ...



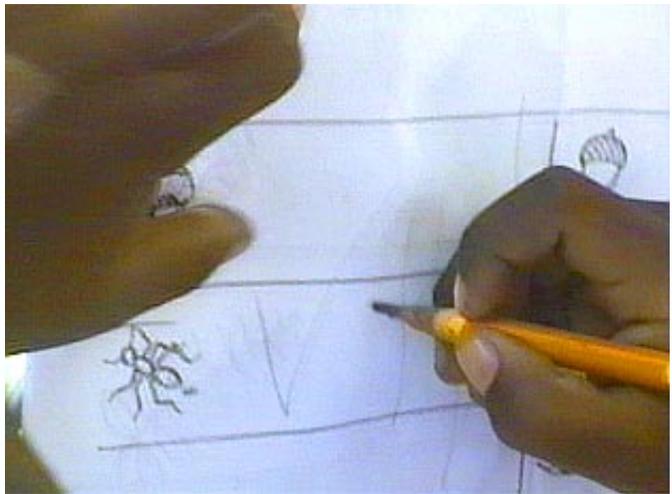
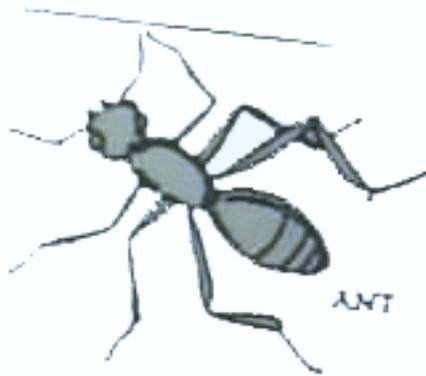
Students place rope circle in side yard of school

This video shows Mrs. Amaro and her third grade students at the Seward Academy during part of their science studies.

The students' previous study was largely concerned with plants' growing requirements and decomposition. They went out to the park to count populations of living things, be they animal, plant or a part of it. They recorded (almost) all they observed to later classify and graph their findings in class.



Student marks tally of “ant” next to image of ant.



Science Workshops, Chicago Teachers' Center

“I always encourage the other teachers to come and go with me. We're going to be studying leaves, talking about trees. Testing the soil, and anything that we can do that is hands on. You can bring all of this back to your classroom and work with your children. We've got a whole yard out front. We've got the park in Douglass Park. There are things we can do in this class that will help us to help our children become scientifically inclined.”

Frankie Sanders, teacher

Botany and Horticulture

Environmental Sciences Workshop

April 22, 1996

Elfriede explains the session demonstrated in the video:

Generally this workshop was about propagation. Propagation from seed being one of them. Our workshops are usually a condensation of lessons to be done at elementary school, so what we did in one workshop might constitute 8 or 9 lessons at the elementary school. So the investigation was really parts of seeds including external and internal parts of seeds, and then the division of plants, of parts of plants, and therefore also seeds. into the rather large groups of Monocotyledons and Dicotyledons. Something that most teachers knew, but then again it has to be called back to memory. And they will have to teach it to the students before they should do the actual germination activity.



Teachers attending workshop at the Chicago Teachers' Center



Then the activity on which quite a lot of time was spent was the germination of seeds in a bag. The obvious objective was to observe the germination of different types of seeds. Lima beans, corn, radishes, and some type of bean was chosen. We planted two of each seed in case one should turn out not to germinate.



The construction of the bag was kind of important. By building the little shelf in the lower half of the bag it provided a shelf for the seeds to rest on while the roots grow downward. This activity can be adjusted to practically any grade level. It depends on what you are doing, how you call it, and what task is given



Planting of the seeds is important, because while planting and while taking care of the germinating bag, the idea of what plants need to grow is reinforced. While plants are growing, the children are recording at a time of germination, they are recording at what day the seed leaves unfold, on what day the seed leaves turn green and photosynthesis begins, and they are recording from day one -- which is when germination becomes visible, and the growth, the length of the plant upwards in centimeters. And so they make a daily record of it.

Laura Amaro, commenting on the Botany and Horticulture workshops

“And now I find that teaching science is not as hard as I thought it was, or it is not a totally different world teaching it. I like teaching science, I wish I could teach more of it in the classroom.”

Classroom Follow Up

Laura Amaro, 3rd grade teacher

“The workshop leader, when she comes into my classroom, the children are thrilled to see her all the time, it is like a professional is coming into our room, to do something different with you that I don’t know or that I need help with. She’s going to help me, I’m going to help her, we’re going to be working together to help you give a new meaning to whatever we are going to do. Whether it’s weighing, or observing a little insect, and she is a very big help because I learn every time she comes in, as well as my students. I’m learning from her also.”



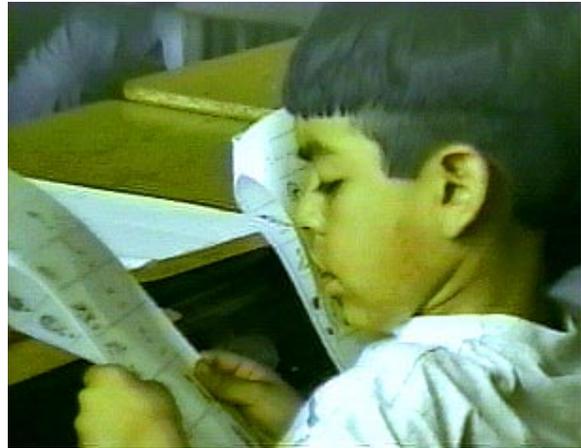
Students looking at observation record sheet

Description of the Follow Up Activity

Elfriede Pergams, workshop leader

For Mrs. Amaro's class I used kind of a generic observation record sheet. Which was created for a later time in the Spring than the event actually did take place. That is why there are any number of insects and other animals shown that are visible during later times during the year than they were during the first time we went out. The rationale for using the sheet was that the children basically do not necessarily know the name of the living creature or the plant they are seeing. That therefore a pictorial representation would help them to identify it. The children were asked to do two tasks, namely to observe on the way to the park and while walking through the park, and then take a few minutes to record in tally form, plants and creatures they had been seeing on the way.

And then they were asked to take a small area in the park, make a circle with the string provided, and examine everything inside the circle, starting with what they saw the most of, and make a tally mark for each of the plants and animals they saw.



When her class was back in the classroom, she was able to teach her children the recording of their data collected into a data table. And then turning their data table information into a graph. Which for children at fourth grade level is quite often a novel experience. It was a lot easier to do that with them because they were using data that they collected themselves.



acorn

Laura Amaro, Description of Outing to Park

"We went off to the park, and I was amazed at how they acted at the park. I assumed that they are at the park all of the time. But this was a totally different thing. They were so excited. It looked to me like they were viewing everything for the first time, like they never saw a little bug before, or leaves or seeds. and all these wonderful things, look at this, they were comparing their seeds to each other. They quickly collected in zip lock bags little items they had found. different seeds, different leaves, they would look at tree bark and little insects running around. And while they were at the park, they were graphing and tallying. All the things they found, they were counting the birds. It was just so enjoyable, it was really nice how they had it focused. They knew exactly what to do and they had fun. It must have lasted about 1/2 hour or 45 minutes. The park is about a block and a half away from school. It was a wonder to me, like I said, they looked like they had never been to that park before. "

Mrs. Sanders

Describing the first Classroom Follow Up

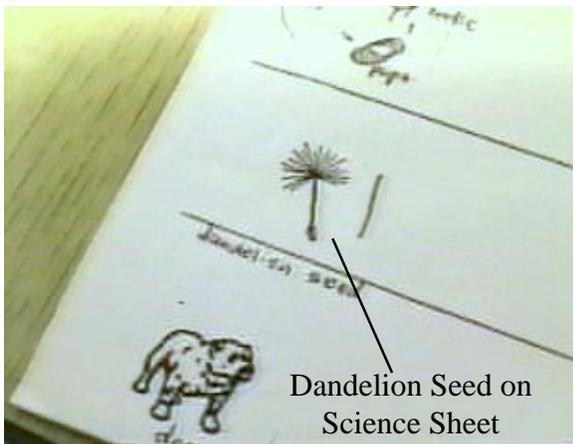
“We went looking for spring, to examine the leaves on the ground and anything that was under a rock in case we turned it over. They found ants, and we also took a walk across the street and visited the people’s yard across the street to look for the signs of new growth.”



Teacher Initiated Classroom Follow Up

After an initial visit to the yard near school, Mrs. Sanders took her Kindergarten students to a place on the school ground to choose a garden plot. Then they returned to the classroom and took out their journals and identified and drew seeds collected on the trip. This was supplemented with additional seeds for identification that Mrs. Sanders had received during workshops on seed identification at the Chicago Teachers’ Center.

Transcriptions from Teacher Led Classroom Follow Up Activity



FS: Okay, take a very close look, and we can use our magnifying glass and then I’m going to give you your science book. Your science drawing book, so that ...

What are you going to do with your science book?

Write it.

Write it, and...

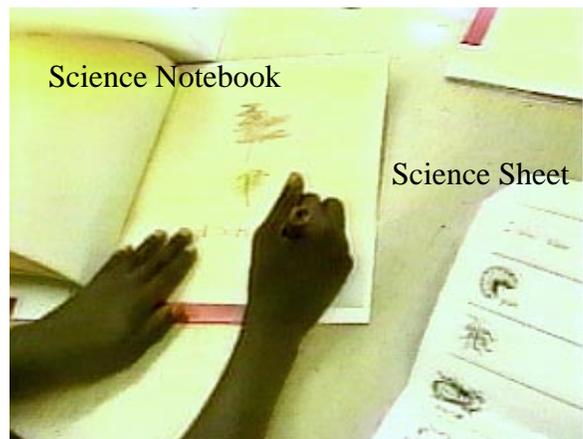
Draw it.

Good.

FS: Okay, does everyone see it? (the drawing of the dandelion seed) Does everyone see it on their science sheet?

All right, you’re going to check it off and draw it in your science notebook.

(children draw the seed in their notebook)





Child is checking the spelling of Dandelion Seed as she copies the words into her science notebook.

FS: Okay, now how many of you see the words dandelion seed? Does everyone see that?

Do you see the word dandelion seed?

Right here

Okay, now put it in your book.

If you are careful, I have a couple of other seeds for you to see, if you promise not to break them. And some of them are on your sheet. You can look at them and then draw it and put it in your book.

Frankie Sanders

Describing the writing context for science notebooks

“We began journaling, and I was giving them a folder so that they could keep a record of the things we did in Science. So they were eager to keep their journals and science journals going. And this year they are in first grade, and they are also doing journals, and that is a carryover from their kindergarden year last year.”

Frankie Sanders

Commenting on Workshop Activities in the Classroom

“It makes teaching easy to have the kids really become involved in their own learning. When they are able to not just look at the pictures of the things that we are talking about, just listen to me talk about it, but to really put their hands on the seeds, put their hands on the trees, on the leaves, and to take part in their own learning, and teaching themselves and one another, and learning from one another, it makes science fun. They don’t even know they are doing science, they are just having fun.”

Second follow up with Workshop Leader

Classroom Teacher Leads the Observation Activity

FS: “This will be your observation circle, you will put your circle down and we will look in your circle for what you can find that is on your sheet.”



Tree Planting

FS: And this is a Balsam tree, we have to make it (the hole) deep enough, for the what?

These are the what,
The Roots

FS: For the roots, it has to be deep enough because the roots are going to get bigger and longer...

So we need to make it deep enough so that the roots have plenty of room and it will hold it in the ground.



Frankie Sanders

Comments on Tree Planting Activity

We really watched that tree for the last three or four weeks of school, because that was all we had just those three or four weeks. And we would go out and check on it every day. And I even rode by on Sunday night a couple of Sundays. And if it needed water I would water it. Making sure it was still there. So for the kids that were in the neighborhood during the summer, I would see them at the store, they would yell at me. "Our tree is still there, Our tree is still there." And right before school, it disappeared.



This evaluation document can be downloaded or printed from the world wide web in pdf format:

<http://www.videodocument.org/sciencelit>