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ABSTRACT

This collection of personal essays relates elementary classroom experiences representative of curriculum themes in open education. Essays are concerned with such topics as: (1) the question of what is the curriculum of the open classroom; (2) development of a curriculum on a medieval theme in a fourth-fifth grade class; (3) study of prehistoric life triggered by a trip to the natural history museum; (4) an approach to reading based on the children's experiences; (5) lessons in Chinese culture led by a Chinese student teacher; (6) a pollution study unit developed by the students in a third-fourth grade class; (7) a calm approach to sex education; (8) excerpts from a study unit on Africa; (9) a study unit on Puerto Rico; (10) reading activities developed from student direction; (11) activities inspired by flight guided by a teacher who is a pilot; and (12) an excerpt from PHENOMENOLOGICAL DESCRIPTIVE INQUIRY AS A METHOD OF DOCUMENTING OPEN CORRIDOR. A list is provided of Workshop Center for Open Education publications. (MM)

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TEACHERS WITH CHILDREN:

Curriculum in Open Classrooms

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Editor's Note

The accounts of classroom work that make up the bulk of this collection are a small sample of the curriculum themes in open education. Our teacher-authors have created illustrations of curriculum development that are intensely personal at the same time that they draw on the expertise of such sources as Education Development Center, the Growth through Art and Museum Experience (GAME) program, the New York City Board of Education curriculum bulletins, Nuffield Foundation materials, the Museum of Natural History, the Metropolitan Museum of Art, and others. The selections in the following pages are offered not for modeling (as is usual with curriculum bulletins) but for sharing experiences of professional growth.

Contents

On Curriculum

Lillian Weber

What *is* the open classroom teacher's curriculum? From what sources is it derived, and what is the teacher's role in its development? These are difficult questions that command the attention of both open classroom teachers and those who support the process of their changes. They have sometimes been raised with the implication that there exists a lack of curriculum in the open classroom or that it is at best built on happenstance or absurd spontaneity, lending it a trivial and ephemeral quality. What the open classroom teacher offers is at other times seen to have no planned input, to be a response to every passing fancy of the child with no thought for development or continuity from grade to grade, and with little regard for the inheritance of knowledge.

Nevertheless, in the approximately ten years of open education history, teachers--using the help of workshops, summer institutes, teacher centers, advisors, and sharing with others what goes on in their classrooms--have developed some broad sustained themes that reflect their own understandings and that are responsive to children's focus and inquiry on many levels.

Certainly it cannot be claimed that the teachers who first rejected the prescribed syllabus had much understanding of curricular issues or even much experience in curricular development. How could they since they had been largely excluded from the whole process of curriculum building! In fact, they were expected to "cover" in their lessons curriculum bulletins made up by experts who in turn had organized the subject matter they considered "essential" according to its internal logic and according to their view of the development of a "generalized" child. Such an approach to a "generalized" child, it became clear, was a poor match with the actuality of a child's construction of the world. A teacher might very well cover prescribed material; she might record the success or failure of its intake, but more than coverage or recording was needed to support a child's actual development of understanding or to know what that child actually knew.

The open classroom teachers' response, rejecting coverage and passive intake of prescribed content, was directed to the active outreach of the child's intelligence and to the specific rather than generalized reality of the children in their classroom. Teachers had still to develop not only a basis for the selection of content but also a rationale for their own role as curriculum makers. They had to expand their understanding of what

the child is seeking to understand and its relationship to the broad areas of knowledge we think of as "essential" and of their own role as adults relating to the child's search. At the outset these teachers were constrained by the pressures of traditional arrangements as well as by their own rootedness in past ways relating to individual and group. Often their classroom resources were not used in any depth since they tended to extend their focus in a thin, evenhanded fashion to all the individuals in their class. Even as they moved from whole class to individual teaching, the prescribed syllabus often still dominated their work. Because they tried to "cover" all the individuals every day in the same way they had once covered the whole class, serious follow-through with any one child proved difficult. How such follow-through could be accomplished was spelled out only as teachers used the opportunities for observation, response and adaptation created by open classroom organization.

Response and adaptation required decision-making as well as justification. Even initial provisioning of the classroom called for selection based on knowledge of the possibilities in materials for use by children of various ages at various levels and in ways that connect to other materials and to speculations aroused by such use. Basic provisioning for language development, reading, and mathematics at first followed--and still does so to a great extent although contemporary research in language organization and reading process is changing this picture--progressions set by traditional school requirements, not by an analysis of what the child needs to know and seeks to know in making sense of the world. Where the institutional requirements allowed leeway, the provisioning for inquiry about the physical or social worlds, or for expression and representation, was often happenstance and transitory with no distinction between "interest"--a child's sustained question in his effort to make sense of the world--and passing fancy.

How engagement develops; how one experience connects to another, and how sustained the involvement is that uncovers complex aspects of the simple--all these processes remain puzzling until teachers experience their own learning, themselves going beyond first interactions with a material or situation to raise their own questions. As the questioning and exploration continue and are pushed further, a richer and more detailed personal understanding of what is being questioned develops. Only teachers with such experience can achieve the basis for sympathetic observation of a child's use of what they have provided--for responses that link them supportively to the child's use.

It is these experiences of their own learning--and opportunities for reflection on these--that those of us who support teachers' change at the Workshop Center offer in support of teachers' decision-making on curriculum. Such experiences are offered for the insights they may afford as well as for the chance to increase the base from which teachers can respond to the child's groping into understanding. A teacher's response cannot help but be to detail; the child's detail must resonate in the teacher's own experience of detail, must be recognized, must receive empathy. What is offered at a resource center such as the Workshop Center is offered in the conviction that standard curriculum bulletins

and information gathered by subject experts can be used only as these are made alive in the teacher, transmuted by feeling and energy through interest and inquiry either in response to a child or as active personal interest connecting with a child's questions.

What a teacher confirms for a child emerges from the base of what that teacher knows and understands, a framework that is personal but is embedded in a cultural context and inheritance. If this base should be too narrow, static, stereotyped, and inflexible, what is confirmed will thereby be diminished. Though the frame of possible response and interaction is personal for each teacher, she carries a social responsibility to base this frame as broadly, intelligently, and appropriately as possible.

A personal curriculum--personal for teacher and child--is not at all the equivalent of *no* curriculum. In its deepest meaning curriculum derives from the broad categories of questions we as humans raise in making sense of the world--the outer physical world and the social world--and from our need as humans to express and communicate our understanding. We pass on the inheritance--understandings that result from intergenerational relationships and the social context of our lives. For the child this inheritance is absorbed as it is linked with his own development and the questions he is asking. Planning, then, in such a curriculum--for group and individual--depends on the teacher's understanding of the development of children's questions about the world and, adaptively for the particular child, on the teacher's understanding of where a child is at, an understanding that is based on the teacher's observation of an interaction with that child's use of what has been provided. Further, it depends on the teacher's understanding of possibilities and connections within the materials she provides.

Further insight into curriculum development grows as teachers study their own role in this development: To begin with, they become aware that the nature of the content itself produces differences in the quality of their reaction. A child's language development *demands* a different set of interactions with a teacher than do his first inquiries about the physical world. A teacher's bent or talents surely affect her approach to and handling of any material. But all teachers need to use their own expertise--and that of others--to see material and subject matter with the child's eye. Then, too, teachers experience different interactions with the individual and the group. Leading group discussions, presenting groups with possibilities of new materials in dance, drama, and story, offering group experiences in these areas, helping groups share and consolidate what they know--all this teachers realize, while being quite personal, need not be an individually isolated curriculum that denies the importance of social interaction and the social experience.

A growing sensitivity to *how* a child makes sense of the world redefines the teacher's confirming role: What does it mean to confirm the connection the child has made between this point and that? What if it is inevitably an inadequate connection? How is fluidity of conception maintained for the necessary reconnections and reconstructions of understanding?

Discussion and verbal underlining are now differentiated and an auto-

matic verbal underlining or interpretation of each experience is called insufficient. Sometimes such verbal reinforcement or "feedback" may indicate to a child that the teacher has heard him or has seen his work, or it may tell a child the teacher's understanding of the experience, but it may not properly match the actual understanding achieved by a child or be the proper response to his implicit question. It may demand of the child's understanding too quick a step out of haziness. It may be an overeager tuning-in to what a child *could* have been aware of rather than what, in fact, he *is* aware of. Thus confirmation of only "essential" points (derived either from logical analysis or from judgment of what is "essential" inheritance) is rejected as possibly blocking perception of what a child did perceive, of what he needed for confirmation or correction, and of the bridge he is building of his own insights into essentials.

Summing up, a child needs an adult who tries to see with what piece of reality he is grappling and what insight he has had--in effect, who sees with a child's eye. An adult must be able to see what discrepancy in a child's past perception has challenged him. Does another child or the teacher argue for a different perception? It is this difference that has to be discussed.

The settings we have established for community and interaction in the Open Corridor classrooms and at the Workshop Center have been strongly supportive of teachers' exploration of curriculum questions, enabling them to observe children's use of environmental provision in a way previously inaccessible to them. In this community setting teachers sharing what they have developed can also provide for continuity in experience for each child as he moves from grade to grade. Teachers are encouraged to think through the learning possibilities inherent in any given material or implied by a given situation; they also receive feedback from other people with similar experiences. In this way teachers gradually are enabled to get past the single isolated experience and to begin to understand the continuous fabric of a child's learning, the connections a child makes as a result of a particular learning experience, to appreciate that these connections may be separate strands but still related. They begin to look at curriculum not as something prescribed that one then hands down to children, but as a means of support for the child's continuities and transformations, for his concentrated engagement over time, for multiple unfoldings of layers of experience. Curriculum, as the teacher begins to use the term, is defined as her selection--all within the possibilities and reality of the school setting--of the body of understandings that children are synthesizing.

Provided teachers understand the purposes of a child as he tries to understand himself, other people, institutions and the physical world; provided they understand that a child grows from a stance of egocentrism to one embracing universals; provided they understand the context of culture and inheritance from which they themselves operate, teachers can even sometimes use the standard curriculum bulletins--flexibly and with extensions and adaptations to match their own and the children's purposes.

Life in the Middle Ages

GRADES 4, 5

Robin Rubinger

This is an interview with Robin Rubinger on the development of a curriculum on a medieval theme in her fourth-fifth grade at P.S. 75 during 1973-74. The interviewer is Nancy Schaffer, advisor, whose words appear in italics below.

At the start of the school year, the teachers in six classes on the first-floor corridor decided to use the Middle Ages as a theme. Our art cluster teacher had worked during the summer at the Cloisters and had developed a whole curriculum in her head about the Middle Ages. Of the six classes, two definitely didn't get into it very much at all; the bilingual dropped out; another class turned to something else; and the Middle Ages was just incidental; and of the two remaining, my class became more heavily involved in the theme, perhaps because they were older.

My students started by talking about myths, legends, and fairy tales--and about religion and superstition. We took a trip to the Cloisters just after that. We looked at the building itself (at that time the tapestries were not there). We noted the shapes and building materials and considered what is a cloister. Questions about the religious life of monks and their relation to the church led into a discussion about education. I did considerable reading to them.

Were the children into any tactile kind of project?

At this time, too, we were doing very carefully detailed drawings of things we saw at the Cloisters. I thought that the kids needed to focus in on things. Many of them were very careless about their work, and not only their art work. So I devoted time to helping them develop a more critical eye about their work. This I think was achieved largely through sharing and looking at each other's work and discussing it. To these activities we were able to give considerable time since during the first few months, we concentrated on individual efforts before undertaking big or group projects.

In addition to the Cloisters, we went to the Metropolitan Museum to see the Armor Room. From this trip we did a lot of drawing, first going to books from which we copied models of the different types of armor, categorized them chronologically, and compared the materials that were used. We also created our own ceremonies, based on what we were learning about ceremonies of the Middle Ages. For example: one student did a ceremony of getting a hair cut; another, a ceremony of blowing bubbles.

Did you maintain charts of medieval words and expressions?

When we tackled the social class system--from the king, lords, ladies, and the vassals, down to the peasants--we amassed a huge new vocabulary related to that. From the feudal life of the castle we next examined life in the monasteries. We read further about how towns developed, which I think the kids found most interesting, and of the lives of craftsmen and townspeople. We had noticed that knights and lords had family crests, so we looked at some that we had found in books and began to make our own. Everyone did a small one on felt and we then put them together on one large banner, which is still on display over at GAME (Growth through Art and Museum Experience, a program that offers studio and museum experience to children and teachers).

Your class built models of castles which were very beautiful and elaborate. Do you want to say a little about how they were made?

We started with whatever cardboard boxes we could find. We spent an afternoon just playing with the shapes while looking at pictures of castles. Eventually we got something that looked very roughly like what we wanted, and we started taping together the shapes on a big sheet of plywood. Then we put papier mache over parts of it that weren't smooth and painted the whole thing. But what was most exciting, I think, was that the kids enjoyed doing all of the details and trimmings. Then, interestingly enough, for about two weeks the kids stopped working on the castle. I think they just needed a break, but for awhile, I was afraid that our whole study of the Middle Ages would come to an end. But when we decided to put the castle on display in the corridor they really got busy and started fixing it up. And each time I would bring in some piece of decoration that I thought would be good to use somewhere; it sparked a new interest.

They actually decorated the inside, the courtyard, and the rooms?

Inside there were people made out of clay, spools from thread, fabric, pipe cleaners--just about everything and anything. There was a Cloister, and flowers, and tapestries hanging on the walls. The kids really liked doing it; they liked that whole doll house effect.

ILLUMINATED LETTERS AND BOOKBINDING

And at the same time they were making beautiful fabric-covered books.

We started the bookbinding very early, and it carried over throughout the year. I had learned the right way to bind books at a GAME workshop for teachers. At first I thought it was going to be a huge job to start everyone off, because until you know how to do bookbinding it takes a lot of time to do well. But a couple of girls were able to get everyone else started. Whenever the kids had a long story or some collection of work that they had done, they were anxious to put it into a book.

You kept it set up all the time?

Yes. As long as I had all the materials here, the children just went to it by themselves. Andrea's father has a book store, and he brought us some beautiful books containing letters illuminated with the gold paint that the kids were especially anxious to use. They started by taking the first initial of either their first name of their

last name and doing their own illuminated letter. Then some kids became absorbed in making their own illuminated letter alphabet books. Some of those were bound, with a little introduction about what illuminated letters were. When I received all the kids' individual pictures that the school photographer had taken, we put up a chart of their names in medieval lettering next to their pictures and had that on display. A lot of the kids would start with the illuminated fancy first letter whenever they would write a story. Some of them tried to use pen and ink for printing whole stories--but that's very difficult. They were doing a lot of creative writing and drawing, mostly fairy tales or legends featuring, at first, the monsters and mythical beasts we had talked about. Then I came across something in CRICKET magazine about medieval monsters and the tales that people believed in during that time. We then started creating our own monsters, giving them strange names. A lot of their stories were about lords and ladies, and princes and princesses, peasants and vassals.

For the most part everyone was involved very heavily at some point. Not everybody was into every single project, but there was no one who wasn't involved in some thing at one time or another.

ARMOR AND COSTUMES

After Christmas I know some of the children were making armor out of pop tops.

Yes, we'd started collecting the pop tops from soda cans very early. Then at GAME we had a session one morning with Pop Top Jerk (a man who makes clothes from pop tops). We brought our little armored vests that we had made to show to him, and he showed us the right way to do it. I thought that it would start people off again in trying to put together some armor, but that didn't happen until the Fair when, planning costumes, some boys decided they wanted to wear pop top armor vests and, knowing the right way to do it, found it was much simpler--and it came out looking very good.

After Christmas we also started making rag dolls that the children sewed and stuffed and dressed as medieval characters. That was right after we got into the life around the towns--the cobblers, the bakers, the vendors. We had a long list of all the different kinds of people. The children picked someone that they were interested in, cut out a very simple pattern, and decorated it. The sewing was very difficult for most of them to handle, and not that many kids finished. I guess it would have been better to have done puppets at that time, which would have had more use than just seeing a nice little doll.

How about the reading that went on along with this work? Did you find that the kids were stimulated to read beyond what they had read? Did they get so involved that they wanted to read books about the Middle Ages?

Some of them did. I think maybe a handful got into reading beyond. I had pulled books from wherever I could find them--in the school library and Public Library--that had anything to do with the Middle Ages, even social studies textbooks in which I had marked off related chapters. Not that many kids were really interested in the textbooks. I did bring in a lot of books that were collections of fantasies and legends.

And you read to them a great deal.

The group became very cohesive. I could see it when they sat together and had discussions and when they came together for stories.

Yes, well I called them together a lot--sometimes as often as four times a day.

How many books do you suppose you read to them?

Maybe fifteen. Some of them were very long books. Not all the books were connected with the Middle Ages, except in the beginning. And then there were definitely very low points of interest in the Middle Ages, and that I felt was fine, because I was weary of it also. But generally activities connected to the Middle Ages did go on all year. There were just high points and low points--just as in anything else, I guess.

VISITS TO THE TAPESTRIES EXHIBIT

What about the time you began doing the lion?

I'm trying to think how we actually got started on it. I guess one of the biggest pushes we had was our visit to see the tapestries. Before we went we had a session at GAME with a professional natural dyer. Some kids got into that, and we started talking about themes again. They already had a lot of background information about the Middle Ages when they finally went to see the tapestries at the end of March. And they were absolutely thrilled--every single group that went.

Had you gone to the exhibit by yourself first?

I had gone twice before I went with the kids. And one of my student teachers had gone. When I went the first time I took the recorded tour. The second time I went without the tour to look more carefully and decide what I wanted the kids to focus on. Because I knew that the exhibit was too long for the kids to go through the whole thing carefully, I wanted to narrow it down. So we concentrated on the Unicorn Tapestries which were, I think, the most beautiful.

Yes, and the most dramatic too.

Right. Before we went I filled them in on the story a little bit, and we talked about what the tapestries were used for, whom they were done for, why they were done. The children found all of that fascinating, particularly the little fact that tapestries were used to keep out the cold on the stone walls. And when we came back from seeing the tapestries, we did a lot of detailed drawing again. Everyone had bought post cards of some sort. Each person focused on something--maybe it was one flower or one animal. We did a lot of sketching at the museum itself; if we took a group early in the morning before it got crowded the guards wouldn't mind our sitting on the floor and sketching in pencil. And most of the kids sat right up close to the tapestries for as long as twenty-five minutes, with people milling all round them.

How many trips in all, and how large were the groups of children?

I think the largest group was ten. I went twice, and one of my student teachers went a couple of times, until we covered everybody.

What was the nature of the interchange with the other classes who were doing a medieval theme?

Right after the tapestries visit we made a life-size papier mache lion in our class. And Carol Karasik's class

made a large unicorn. And it became a competitive sort of thing.

Didn't they design them with the idea of their being together as they are now?

No. They were not originally planned to be together, but it turned out that way. When the kids decided on the lion, the unicorn had already been started. We had decided on the lion as a group. As soon as we mentioned papier mache everyone got very excited. And again we started pulling together all sorts of junk such as chicken wire and boxes. And again we played around with the pieces and the shapes until we had a basic structure, the whole time looking at this one particular picture of the lion from a magazine on tapestries. We started by taping and stapling to make it firm. And we must have had on maybe twenty coats of papier mache.

How did you pad it for shape? It didn't look like boxes to me.

We had gotten hold of some foam rubber and that stuff that goes under carpets and cotton, so that we could make curves.

It was a very curvy and natural-looking lion.

It looked very kingly too. I think they really captured the same look, or feeling, that the lion had in the tapestry. So many children worked on him. They all took turns. It took an hour just to mix the right color to paint him.

Were there some children who stayed with the project more than others?

Two people worked on the face because they were the good artists. And two girls loved to get their hands all messy, so they were the ones that did most of the papier mache. But I'd say maybe twelve to fifteen people made some sort of contribution to it. Everyone put in ideas when we were first doing the diagram of what we wanted the lion to look like. Some girls became busy making the mane. We did it in patches, hooking yarn over little pieces of dixie mesh and then placing them around his head and neck with glue until we got a truly bushy mane. But every kid had something that he or she liked to do that fit in nicely.

How long did it take from beginning to end?

Oh, I don't know--maybe four to six weeks. But again there were periods where the kids would take time off for awhile, which was good because it gave us a chance to stand back. The unicorn was finished and put out into the corridor on a Thursday or a Friday. And then on a Monday morning the first thing we saw was the unicorn with its legs broken on the floor. And I said, "Our lion is not going out there."

That beautiful piece of writing by Marie in your class developed from that incident in which older boys who came to use the school gym for basketball practice broke the unicorn on display in the corridor.

Yes, she wrote a story called, "The Legend of the Lion and the Unicorn." In the story the unicorn was out in the hall and he was so proud and beautiful that the lion got jealous and sneaked out of our classroom and went down the hall at night and scratched and tore at the unicorn until it fell down and was broken. Then the cleaning lady came and the lion sneaked back on his perch. The charming thing was that the story was written as a medieval legend in old English style. Then the lion went on display at the

Metropolitan Junior Museum cafeteria. And when the lion was delivered back to the room, every single kid got up and went over to it. It was as if the lion was alive to them. They were hugging him and stroking his mane and talking to him and saying, "Oh, we're so glad to have you back." And so the art cluster teacher and I decided to put the lion and the unicorn back out in the hall on display. Fortunately nothing happened; in fact, they've been preserved very well. Seeing the two of them together, the kids often talked about the lion and the unicorn as being friends. They developed real personalities, the two of them.

TOWNS AND SOCIAL SYSTEMS

Another thing to mention is that beautiful relief mural on the classroom wall of a medieval village with cardboard houses mounted on it.

That all started when I was reading to the kids about town life. We talked about the difference between a merchant and a craftsman, and about how the town was set up. Especially interesting was the fact that craftsmen and merchants lived above their stores, which of course carried over into the towns much later. Another interesting fact that the kids never seem to forget is that the tops of the buildings were built out--the builders were using all of the air space that they could. Each house was connected. The streets were narrow and very dark since the buildings would jut out over the streets. You could put your hand out the window and almost shake hands with the person across the street because that's how far out the tops of the buildings were built.

across the street because that's how far out the tops of the buildings were built.

At this point someone said, "Let's build a medieval town." And again we started collecting boxes and shapes and things. Then someone decided she wanted to do the church, which every town had to have, while others picked a merchant or a craftsman and started working on the buildings and tradesmen's signs. When we finally had about fifteen different buildings we put up the mural. Some children started sketching the town, being very careful to put in the fields in the background. They drew in people working the fields or carrying wood. It's interesting that they put everybody into action poses. Then we nailed and stapled up the houses along the road.

And didn't they also build a large model of a medieval house with an overhanging second story made out of corrugated cartons?

Yes, that was a very large one. It was made up of two T.V. boxes.

THE MEDIEVAL FAIR

When did you decide to have a Medieval Fair and how did it come about?

When we had first talked about this Middle Ages theme way back in September, one of the first things I asked was, "Can we have a Medieval Fair?", and the idea stuck in my mind. When the weather started turning good--and our class had never really done anything very big and the whole corridor had never done anything together--I thought maybe it would be a nice culminating activity for everybody. All the other teachers said that they would like to be part of it. So we met every week to brainstorm and came up with a lot

of ideas. This went on for seven or eight weeks, I think. We decided that everyone would come in costume and that the drinks would be some sort of medieval wine or punch. We had learned about herbs from visits to the Cloisters, and one class did the actual planting of herbs. We had learned a great deal about cooking from my student teacher, and we had prepared medieval-type breads and soups and jams and jellies. For the Fair we just divided up all the ideas among the five classes. But I think most of the time was spent on making our own costumes and trying to get things as accurate as possible.

Yes, they were, in great detail.

I think the word "detail" is stuck in my kids' minds. In the beginning of the year I stressed looking carefully at things and noticing details.

For their puppet show I noticed that they got books and pictures of medieval costumes and took time to examine them very carefully, discussing all the special details of trimmings and jewelry and fabrics to make them look authentic.

For the costumes we made a list of what everyone wanted to be, and we pretty much covered everybody that we knew of. We tried not to duplicate anyone. We had a vendor, a cooper, a locksmith, a tinker, a baker, a magician, a jester, a lord, a lady, a princess, a fortune-teller, a squire, a few peasants, and a monk. And yes, even a minstrel.

For maybe four or five weeks everyone worked on costumes with the sewing machine and with help from parents. One girl took things home to her mother, who would sew them up and send them back the next day. A couple of parents did that. And a couple of parents came into the room and helped a great deal--especially the day of the Fair.

Some of the children did all of their sewing themselves?

Yes, and we had so much just pulling a little from everybody. If you remember, I had a lot of trimmings from you and from everyone's attic.

I was very interested in the way the children worked with all the excitement going on about the costumes and the puppets. Everybody was very involved--and very self-controlled considering the dynamic nature of the project. And one of the things that impressed me very much was that children like Marie and Lovett who had not wanted to make puppets at the time of the puppet show came up after they saw the other children's puppets and asked to make them. You had very wisely kept all the materials available so that they were able--once they were stimulated by the others--to go ahead and do it for themselves. I was most impressed with that. So often if children don't do an activity at the time it's offered, they lose the opportunity to do it at all--there is no chance to do it when they're inspired.

I have found that if I have all the materials around--if I leave them out--lots of times the kids will go to them. And without needing my help and by just asking me where something is they can pretty much do it on their own once they have seen a group that has already gotten started.

STAINED GLASS WINDOWS

I should make the point too that different people have come in and contributed something--like Ruth Lowy, who introduced the stained glass window work. Then it would be carried on by the children. When we went to the Cloisters, one of the things we looked at were the stained glass windows, and it happened that this was at Christmas time. Ruth had decided that the bare windows out in the corridor could use something other than the usual Christmas kind of decorations, so she got the kids to look again at the themes that were in the stained glass windows--very religious kinds of things featuring priests, monks, and Biblical scenes. The kids made sketches first; then, using black paper and scissors they cut out figures and then put colored tissue paper behind the cut-out. It sounds very simple, but it's really very difficult to know what to cut out and what to leave in.

Yes, it's like a positive-negative.

Some kids found out that if you cut out the whole thing you're not left with very much, so you have to vary the color of the tissue paper. And the first ones they did were really fantastic. They looked great on the black paper with the light shining through. People who would pass by the school at night said the stained glass windows looked so nice. There was always a light left on at this end of the corridor and it shone through. A couple of months later they really started getting very raggedy looking. It was turning Spring, and we had decided that we would try it again and just see if the kids might be interested in doing another set of windows on light-colored paper using the themes from the tapestries. And sure enough, they really got very much into it again. They were more sophisticated the second time. Instead of using scissors we used razors, single-edged razors, and I was a bit worried, though I guess by that time I knew the kids very well, and I knew that they could handle it. So using the razors they were able to make the paper strips look like the leading in stained glass windows. It made a much finer cut. And they found out that you have to cut on a piece of cardboard or something a little padded. We must have worked for maybe two weeks on those. Each one was incredible--so much more superior to the others.

You also did some mosaics, I noticed.

That was another thing that was inspired by trips to the Cloisters, as well as trips to see the Armor, when we had gone through some other medieval art rooms and looked at the mosaics. I started that with just a few kids who I thought could handle it. I wanted them to do it with tiny squares so that they could get in more detail. And I was very surprised to find that so many of them could handle it. Some kids didn't bother with the small squares, but did very effective ones using the one-inch squares. But what was incredible to the kids was that although everything they put down had a straight edge, they could still create a curved look.

POSSIBLE EXTENSIONS

Obviously, your whole curriculum this year was really based on, or implemented through, art. Is that the way you plan to work in the future? Did you feel you had an especially artistic group of kids, or did you feel they became that way because of their interest in the work?

I think they became that way. I think there were a handful that were very artistic to begin with. And I think that as a whole the class proved to be an extremely artistic group and a group that worked together well both on individual and group projects.

Do you plan to work extensively with an art approach next year?

Well, I happen to be an arts and crafts kind of person.

I don't think you could ever have had this kind of curriculum unless you had a great deal of feeling for it yourself.

That's my strength and that's what I like, and I know that I'm going to continue with it. But I do feel that I have to expand it more into other areas that aren't so easy--for instance, I can't tailor science a great deal to art work.

No, but you could have tailored some science to history. Did you do that?

Yes, through inventions. But I didn't get into anything else in as much depth as I did with the art work, the literature and the writing.

How about the development of the class on the whole? We said that they were very socially mature and that they were very deeply involved. Did you feel that over the year you saw a tremendous amount of intellectual growth in them through this way of working?

Yes, one thing that helped was having a carry-over of eight fifth-graders; I had them last year as fourth graders, and they knew me and knew the way I worked. They were very good about helping the others--especially in the beginning--in helping them appreciate my ways. It was interesting. I remember the comments way back then like: "Now we do this, and then we do that," and "She doesn't think you want to do it that way," or "She won't like it like that"--and things like that. A few of my very sophisticated fifth graders became very friendly with some of my new fourth graders, and I think there was some of this striving among the younger children to do what the older ones could do. I've found that when you have kids for two years, the second year is far superior.

I know there were a couple of your little boys who even though they were not really academic achievers, in the sense that they probably were not good readers or good math students, were so very, very much involved. A. is the kind of child who takes everybody around to see what's going on. And when he takes someone over to see the tadpoles and the fish and the puppets--and everything else that's going on--by his way of telling the visitor or other adult about it, it is evident that he's taking in everything and its significance is very clear to him. So the chances are that he has come a long way by his being in this kind of surrounding. It's not like a child who has to sit at a desk and can't read the book or the blackboard and so misses out entirely and stops learning out of sheer frustration.

For a lot of the boys who are non-achievers, and who really do rebel against any sort of written work and reading, the art work that went on this year was very good. However, I don't know how much I did for them in terms of getting them to express themselves in writing.

Were they involved in all the stories and all the reading that you were doing, and when you had discussions?

At times.

And their writing, did it improve some?

Yes, though not compared with the class as a whole, but compared to where they were at the beginning of the year. Just the way they presented a piece of writing became better--for instance, it was neater looking. Their penmanship got better. Some could spell more words correctly.

Did they say more? Did what they had to say have more content to it?

Some. But a lot of the time they would write very repetitive kinds of things.

Have they come from Open Corridor?

Most of them, no. Some, yes. But I had a pretty large group of boys that came in at different times during the year. They came new to me from other schools, not from an Open Corridor.

Are you keeping them next year?

Yes.

It will be very interesting to see where they will go in another year. Where do you see your curriculum going next year? Do you have some ideas yet?

I thought of continuing on from the Middle Ages into the Renaissance, but right now I haven't researched it enough myself.

It would be nice considering the number of Spanish children in the school if you got into the New World and some of the Renaissance in Spain, concentrating on some of the Spanish explorations.

I think for many of my achieving kids I really have to get into more sophisticated kind of work. Some of them, I think, feel that the art work is nice; it's fun and they enjoy doing it. But I think they feel they are ready for mapping and geography. I had tried it this year, but I never found the right time or had enough good help from our student teachers to be able to take a group that was ready to get into mapping. I did a little bit with some kids, but certainly not to the extent that I would have liked to--looking at Europe and the cities, doing scale, and bringing math and science into it a lot more. We could have gotten more fully into the whole area of inventions.

Well, if you go on now into the Renaissance you should get to Galileo and Leonardo and the beginning of the scientific enlightenment: telescopes, astronomy, gravity, flight and even rockets, plus the beginning of the study of natural science.

Dinosaurs and More

GRADES 1, 2

Lorraine Raisin

Last year, I had taken many trips with my children to the Museum of Natural History, and we had often talked about prehistoric life but it never actually developed into a theme. This year, since about ten of the children had been in last year's class, I felt that we could attempt some study of prehistoric life. So we took a trip again to the Museum and this time visited only the dinosaur wing.

The trip itself triggered a lot of discussion about prehistoric life--how it began, how things are different now, and so forth. I decided then that we should take "mini" trips to the museum with fewer children just to see the dinosaurs, so as to examine them more carefully. And so we did. We took paper with us and drew some very good sketches of the dinosaurs' bone structure. The children were very excited about it. I found that anything that is connected with monsters interests children. Many of them really didn't understand--especially last year--that dinosaurs were not figments of our imagination but animals that had actually existed. When we came back to our classroom I asked the children what they would like to do with their information, and a lot of them wanted to build dinosaurs. So they started collecting chicken and turkey bones--in fact, it was around Thanksgiving time that this blossomed--and lamb chops bones.

The parents were really cooperative--they sent in all the bones. We built a flat dinosaur with the bones, and then a few children built more three-dimensional things. We were even able to put together a vertebra. Many of the children began to draw in the heads--some with teeth and some without. We then got into the study of bones. We began doing general balancing and measuring with bones: how many bones in the balance scale will equal ten hexagons? Out of these we created pattern graphs. We selected a long turkey bone to use as a standard measurement (it happened to be about ten inches). Then we made duplicate paper copies of the bone and one large graph for measuring how many bones tall we were. We put the bone graph up in the Corridor, and it was very nice because children from other classes would come by and they would measure themselves and see how many bones tall they were. Children who drifted into the hall became intrigued with what it was all about. We also got into the actual weighing of bones.

I was always looking for possibilities--things that we could do to extend our study. So we went on another

mini-trip to the museum, and this time, the children began writing down things that interested them, sometimes using difficult words that they didn't quite understand. They were beginning to ask questions about the meaning of words. On my part, there was much more focusing in on what things meant and explaining words to them. Some of the children began making dinosaur books. They drew quite accurate pictures of the dinosaurs and wrote down interpretive facts about them. We received many books on dinosaurs from parents and borrowed more from the library. Finally, we realized we had gathered so many details that it would be a good idea to compile a whole book about dinosaurs and prehistoric life. During class meetings we chose what were the best-written pieces and what we would like to remember, and these we pasted in the book. The kids were very, very happy to have a product that took on a definite form. They would pick up the book and try to read it. There were pictures in there too, and that helped spark the interest in the reading of it.

Later, the class invented and began playing a game consisting of questions they made up about dinosaurs. If you landed on a certain block on the game paper, you had to pick a card and answer the question written on it. Children who were not yet fluent in reading would participate in this, getting help from other children if they needed it. And then if they didn't know a fact, they were interested enough to go to the table set up as a dinosaur reference area and find out what the answer was.

Now, at some point we took another mini-trip, and the children became interested in the dinosaur egg, and in fact, one of the girls tried to sketch it. After that, the children began sketching crazy eggs, writing about them, imagining that they were inside them, and what they would be doing if they were a dinosaur. We got some fantastic stories out of that which we put in our class newspaper. One of the children asked a question about other things that are hatched in eggs, and that sparked a series of discussions of how things start and how they grow. After awhile, when I sensed that the children were becoming a little tired of seeing the same things and not having any new stimulation, I would put on a film showing or I invited some authority from the museum to come to talk to them.

Fortunately, GAME arranged to set up a class at the museum with a staff member of the Museum of Natural History. (This ordinarily would have cost us money but GAME was able to pay for it.) We brought our dinosaur drawings with us and some of the books the children had made. The lecturer called up each child to lift the big dinosaur bone to feel how heavy it was, and he showed films. He was impressed not only by how much they knew, but also by the questions they asked. The class met for three Thursday afternoons--from 1 to 3--and altogether it was a very good experience because it tied together a lot of what we had been doing. At this time, too, we were scheduled to visit GAME, and the children who were most interested in this theme made dinosaurs out of junk materials and continued writing their dinosaur books. They'd share their work with the whole class. By now, they had accumulated considerable information about the dinosaur and the kind of conditions that existed at that time. We were able to start building a dinosaur

model.

We thought of the things that existed then and that exist now; we took into account the fact that the early dinosaurs didn't have teeth and were therefore plant eaters, and that the late dinosaurs had big teeth, were the meat eaters, and, in fact, ate up the other dinosaurs and that's why they died off. All this information was partially represented in the dinosaur figure we made. There was some discussion about how many years ago the dinosaur lived. It was hard for the children to conceive of its existence at all, but some of them were able to make the connection between the dinosaur and living animals similar in appearance to dinosaurs. Some of them even knew that the monsters in many of the science fiction films that they see are really enlarged lizards.

We also got into some creative dramatics as a result of the excitement about dinosaurs. I found that my children were so stimulated by thinking of a big beast that they wanted to act like dinosaurs and like monsters. Some of my younger boys, in particular, who were not able to get involved in the academic kind of activities, were pulled into work on skits through the making of costumes and the making of heads like dinosaurs. We included a person, though of course, people didn't exist then. The whole class was interested and absorbed in this project.

Some of the children truly believed dinosaurs to be monsters. In general, there was an interest in monsters, and this interest, it seemed to me, could be connected with the study of the Middle Ages going on in five classes elsewhere in the school. The Art Cluster teacher and I decided that the way to tie the first and second graders in would be to explore the myths and the monsters. We started by reading the children Maurice Sendak's WHERE THE WILD THINGS ARE. We brought in pictures of monsters that had been painted during the Middle Ages and talked about why people believed in such things--how people couldn't travel then, and so didn't know that these were just made-up stories. We learned about the different names that they gave monsters in those days: for example, the manticore, a legendary animal with the head of a man, the body of a lion, and the tail of a scorpion. We tried comparing some of the dinosaur names with the monster names and we found very little similarity between them. And, of course, when we took a trip to the Cloisters we saw actual large representations of monsters; we saw the Unicorn Tapestries. There was a lot of reading going on; in fact, to this day--some six months later--we're still reading books about monsters, and we enjoy them very, very much.

When spring came, a new student teacher was assigned to my classroom who was enthusiastic about growing things from seeds. I saw this as tying in with our study of conditions that existed during prehistoric times--conditions that helped the dinosaurs grow and that also caused them to die out. We tried to imagine what it was like, how the dinosaurs grew, and where man came in. Then we started a project on living things and how they began. We brought frog eggs into the classroom, and the children examined the frog eggs and said, "Wow, these eggs are much tinier than the dinosaur's and are not the same kind of thing." Then we were able to catch a couple of tadpoles and this was a very exciting thing to see. We made a chart of different

animals and insects with these main headings: Animals/The Food They Needed to Grow/and How They Look Now. We tried to make some connection between things. We charted real guinea pigs because these were in the classroom, a big tortoise, also in the classroom, frogs because we had the frog eggs. Some children were interested in plants, too, so we added plants to the list.

What we wanted to find out was how things really did start, not just how children thought they started. So we brought more books into the classroom, books on guinea pigs, on turtles, and on frogs to add to our dinosaur collection. The science area was becoming pretty rich, not only with books but with many interesting things to look at. I think what happened was that they really began to understand what researching something was and what discovering something was. Earlier in the year I had worked on getting my children to want to go up to the Library, to want to find about where they could find an answer to something. Now at the end of the year I would hear, "Hey, look it up in the Library!" There's much more awareness that things are not just what they appear to be and that you have to delve a little deeper to find out things. So at this point a few children do go up to the Library to do some independent research, get help from the Librarian and bring back information to the class about frogs, because that was what they were mainly interested in. They then read it back to the class. This gives me a great deal of pleasure--to hear them read their own research out loud to the class.

We decided to start a book to be titled *Other Living Things*, rather than put the new material in *The Dinosaur Book*, not only because it was different but also because our dinosaur book was getting pretty full. We added a lot of facts about different living things that we found out. For example, it just so happened that one of the classes upstairs, an upper grade class, had just had chicken eggs hatch. We went up to see the chicks and the children were very excited by that. They were able to make some connection with their study of the frog eggs. When we went to Riverside Park and saw little blue eggs in a nest, and when we were lucky enough to see our gerbils drop out, there was a whole new awareness of how life begins. There was talk about how humans are born. Some children said, "But we're born from an egg." Then somebody said, "Your mother doesn't have you as an egg and you hatch." Most of the children were very aware of that; there was no mention of the stork story, which some children really believed in when I was little. We didn't get into any so-called sex education discussion because it actually didn't come up; if it had, we might have taken it up.

The children were beginning to bring in seeds. Those who had started to go up to the country on weekends were bringing in live plants. At that point I attended a three-week series of workshops at GAME after school--on planting, on germinating seeds, on cuttings, and on how to make terrariums. I figured this was a good time to get into growing plants. There was a connection here because the children realized that plants have to start somewhere--we had all of these live plants that were already grown--but where did they begin? Many children know that plants begin from a seed but they

really don't focus in on the conditions that are needed to make seeds grow. They *had* been focusing in on the conditions for growth that humans, guinea pigs, frog eggs and the dinosaurs needed. Now, it was the time to ask questions about plants.

I had grown seeds with children over the years--lima beans, kidney beans and others--but we hadn't really studied the conditions necessary for growth. This time, because of the experience with the study of dinosaurs and other animals, I was myself much more interested in understanding the factors in growth for plants. At GAME, the workshop leader on planting did not simply say, "Well, you use soil." He helped us to understand better what went into the soil; that soil was actually sand, rock, and decayed plant and animal life, and that we could make our own soil, by putting vermiculite, peat moss, more sand, and fertilizer to enrich it. He showed us a piece of mica and pointed out that vermiculite was actually crushed mica. When I got back to the classroom, I shared all my new information with the children, and then the children went to 72nd Street and purchased peat moss, vermiculite, and the fertilizer. So it was a whole shopping experience, too. The children found out that these things are quite expensive (the bill came out to something like $9.00). We also had to get plastic shoe boxes to put the plants into--the ones that we wanted to seal off from the air. Then we proceeded to plant the seeds in different kinds of conditions. We planted some of them in the dark, some of them in the light, some of them with water, just water and no soil, simply with vermiculite, some with just peat moss, and some of them with the whole combination of fertilizer, peat moss, and vermiculite. We also sealed off some plants in the plastic boxes.

The experiment was then ready: to study which way the seeds would grow the best. We recorded this in chart form. It wasn't really possible to have all of the children take over the chart because some children are not as consistent as they should be about keeping a chart. I observed who was the most enthusiatic about the chart; and then placed about ten children's names on the big chart. There were boxes ruled off on it about the size of an index card and there were index cards left beneath the chart. On the first day when a child planted, he wrote on the card what he did--what he put into his little pot, what kind of seed he used--and he drew a little picture of the pot. Then the next day he simply said: "Nothing has happened so far." When we came back on Monday after the weekend, the seed had just begun to sprout. So he drew a little picture and said, "Gee, my plant has just begun to sprout!" and he described what was coming up: "It isn't really a stem yet. It's like bent over." And he continued to do this. Now, we had the chart divided up so that there were about three children who were recording their seeds growing in soil, light, and water. Three others were recording growing seeds in the dark. Some were growing seeds in vermiculite and some in peat moss. We found that the children who recorded the greatest amount of growth were those who had used four o'clock seeds in the whole soil mixture, including the fertilizer, in the light. It was interesting to see this comparison. We didn't actually get into measurement in inches because we didn't see more than about three and a half inches of growth in most of

the plants, and this would have become a very minute kind of comparison.

With this age group it seemed to be very valuable just to compare conditions and what was growing the most. This whole plant project, I feel, made the children observe a lot better and made them put their observations into actual writing. These activities tied in with the study of dinosaurs and other animals because of the observation and recording. You see things but how do you record them in order to remember? At the moment of observation, it doesn't seem important to many children to record it but when they have something like a book and a chart that are available and they come back to it, it's very, very nice. Children can see that product and they're very proud of their work. They've learned from it, too.

There's also the whole thing of working together on a project. Many children in the class were brought together by projects like this where everybody was working to compare what was going on and where all were learning together. It was a very successful project. By the last week in June, the children are going to take many of the plants home; they're very happy about this. It isn't simply: "Oh, I have a plant!" They know what went into it and why they were successful at growing the plants. Who knows--if there were more time in the year we might even have gotten into another extension of this study of living things!

Lorraine Raisin teaches at P.S. 75, Manhattan.

A Reading Approach

GRADES 1, 2

Lydia Rogge
Linda Peressini

Early on in our work we realized that the teaching of reading could be done in a much more enjoyable and meaningful way. We were convinced that we should, in effect, discard the basal reading program. What motivated us to begin to read and think about a language experience approach to reading was our participation in an Early Childhood reading course with Catherine Molony at City College. Then too, analysis of the children we were teaching proved to us that a child's experience and expression could be the primary source of his learning reading. We had seen enough of the teaching of word attack skills as a separate subject--their lack of meaning to the child and their lack of integration with reading process. And we had been struck in particular by the fact that children who had not been "pushed" through a traditional basal approach in our first and second grade classes, because they did not seem ready to read, still had developed their own system of decoding. We felt, finally, we could provide more chances for reading enjoyment and success with a language experience program.

PROCEDURES

We knew what we wanted to do and why we wanted to do it; our next step was how to do it. Here, fortunately, our attendance at the Workshop Center's Summer Institute gave us the opportunity to learn about reading process and reading materials. Most important, we realized we ourselves needed to learn through experience, to risk failure, and to remain open to continued growth.

When we returned to our school in August, we promptly cancelled a previous budget request so that we could order one set of the Bowmar materials we had become familiar with at the summer workshop: the "Breakthrough to Literacy Program" and the "Monster" series. We made sentence makers from manila folders, we bought plastic file boxes for each child's words and sentences, and we created many construction paper books to be used by the children as readers. We were fairly well set up to begin.

We began the year by recording class experiences and stories on language experience charts. We made labels for the children's work--clay, paintings, dress-up, building and construction, etc. Group discussion at meeting time or group activities led to the construction of class storybooks. The children constructed their page by drawing, painting, cutting paper or yarn, etc., and we

recorded their thoughts. As each book was completed it was shared by the class and then placed in the room for everyone's use.

When something occurred that was extraordinary, for example, a trip to a farm, a hayride, or the day a kitten came through our window, it led to these activities:

a) children making large murals using various materials, with their reactions recorded individually;

b) writing an experience story together;

c) printing the story on ditto for each child's individual copy.

We initiated conversations about colors by bringing in food of a different color daily. Following Kenneth Koch's ideas in WISHES, LIFE, AND DREAMS, we talked about how the color made us feel and what it made us think of. The children wrote poems about color which we recorded on experience story paper and then dittoed. The children made books about the colors which included these poems.

Because we felt that it was important to provide an opportunity for children to develop an enjoyment of books, we made available all different kinds of books--picture books, easy readers, science and social studies books, books about the animals in the room, books about crafts using the materials in the Art Center, and others. Children who get involved in a specific area of interest will naturally look at these books; they will read them or ask us to help them to read them to find out what they want to know. Reading *to the children*, reading *with a child*, or having them read *to us* any material that they get involved with leads to the need and, therefore, the motivation to read.

Each child has his own notebook of creative writing, called the "Daybook," in which he has recorded his feelings about various subjects we talked about. An extension of this activity into a daily log of feelings as well as accomplishments is something we would like to try. The daybook has already been extended to making shape books, an idea we borrowed from READING IS ONLY THE TIGER'S TAIL by Robert and Marlene McCracken.

All of this interaction with the children--through conversation, books, creative writing--has given us the means to recognize where the children were at regarding language and readiness to read. It has enabled us to develop with each child more individual reading activities and experiences geared to their readiness and needs.

There are of course a few problems still to be worked out. For one, we need to sharpen our own awareness of and sensitivity to the child's experiences so that we can more adequately record language into written print. For another, we need to learn different levels of questioning to help extend the child's thinking.

THEIR OWN READERS

The children began making their own experience books which were to become their readers. They drew a picture in their book, and on the same page we recorded their sentences. We also transferred these sentences onto an oaktag card and onto individual word cards. These cards were kept in their own plastic file box. We kept word lists

of each child's vocabulary which later needed to be organized into their own alphabetized word books.

The children adapted this procedure to their level of readiness: Some used single words or phrases to label their pictures; others tended to make repetitive patterns of words in their sentences; still others dictated more complex sentences. It was interesting to observe the different ways in which they approached their experience books.

The children use their word cards to create a new sentence in a manila folder, constructed like a small pocket chart. They read it to us and then they record it in their notebook. Some of the children choose to illustrate their sentences. This notebook is also used to paste pictures according to their initial sounds. We attempted to use the sentence maker with all of the children but we realized that this was an unrealistic expectation at this point. We therefore developed several modifications to expand and enrich our approach.

Several children made picture cards to correspond with their word cards. These can be used on their own flannelboards to reconstruct sentences and to create new ones. Others are working in the Bowmar "Breakthrough to Literacy" books, by first choosing a book they'd like to read, then dictating their own story on the topic in their notebook. They work in a shape book with the same title, then read the book. Other children are reading the Bowmar books and the "Monster" books on their own and then they are even writing their own Monster books. As an extension of the program, shape books are available for children to make and use as an experience book.

To promote responsibility among the children and to allow us to spend more free time with them during the day, we have organized the activities of our reading program into work plans. These different plans are appropriate for the various stages of growth in the reading process which we have observed within our class.

We have constructed a chart for reading partners. The name cards are changed daily so each child has a new partner to read to aloud. The children began to read their experience books to each other at our suggestion. They then took the initiative and began to read their notebooks and other books from the rooms.

We have also adapted some of the suggestions for sustained silent reading from the book, READING IS ONLY THE TIGER'S TAIL. A few times a week we all take time out, teachers too, to read quietly.

The children's books are kept on file in individual folders which are easily accessible for the children's use. Their notebooks, readers, and word books provide us with an important part of our recordkeeping.

REACTIONS

The children and their parents have been enthusiastic about this approach. Besides the tremendous enjoyment each child finds with his own success, we have noted the following differences from the methods we had previously used:

1. The children seem to be more confident and therefore more fluent with their reading. There are no stumbling, word-by-word readers.

2. The children are discovering

new words through more use of context clues which seems to lead to greater comprehension of what they are reading. We have also observed the evolution of each child's own system of decoding. This is even more obvious in their attempts to sound out and spell words in their creative writing.

3. There appears to be the elimination of the stigma often attached to "struggling" readers.

4. Most important, there is more of an understanding that the print they are reading is *their* language written down.

This change in our approach to reading has affected the total environment of our classroom. It has provided the opportunity for being involved with the children and their experiences. It also has provided for these experiences to be a part of their reading.

Lydia Rogge and Linda Peressini teach in the public schools of River Edge, New Jersey.

We are told that working-class children cannot learn to read because they have no books in the home and their parents do not read. Transmitted deprivation, I believe they call it now. Yet millions of people throughout Europe in the late nineteenth and early twentieth centuries won their way to literacy from homes which were totally illiterate. Theories about the cycle of deprivation, glibly cited by politicians, have lurking beneath their surface an unhistorical notion that generations passively reproduce cultural attitudes.

--HAROLD ROSEN

Discovering China

GRADES 1, 2

Joan Eisenger

Like so many others in the school, my classroom was made up of several different nationalities. When early in the year I heard some derogatory comments made by one group of children about the others, I decided then and there to reshape the curriculum to improve their understanding and appreciation of "different-ness." It so happened that my student teacher and two children were Chinese, and I figured this would be a perfect opportunity to use their resources on a Chinese unit. My student teacher and I jotted down everything we could think of with a Chinese theme, I helped her do a flow chart of curricular possibilities, and she then did research, using libraries at the school, City College, and the Workshop Center for Open Education, plus the facilities at GAME.

To open up she brought in a globe, talked about the different nationalities, and asked the children where they thought she came from. Most of them knew she was Chinese. Then she said that we were going to find out more about China. We selected a movie about China and ran it off. Although this movie was a little bit above the level of the children, it was clear from our discussion afterwards that they took in what they were ready for. They were able, for example, to tell us what things they found the same about Chinese children and what things were different. They learned that Chinese children went to school but they found that their classrooms were much different. They learned that the family life of China is very important, with the father a central figure.

The children then made a chart of all the things that were the same and all the things that were different. The younger children worked with the older children; the older children guided but the younger children certainly offered quite a bit. They found that the Chinese children were doing many of the same things that they themselves were doing here, playing ball and familiar games. But they also noticed that the gym class in China was much more regimented and that there was considerable work on acrobatic skills. They observed that the foods were different and that the Chinese didn't eat with forks but that they ate with chopsticks. Most of the children were very familiar with this because they had eaten in Chinese restaurants. They noticed that the dress was different: The Chinese children's clothing was very uniform while their own clothes were much more colorful and distinctive.

We then studied the globe: some

children measured from New York to China in inches and then made it up on a scale to figure out how many miles away China was. While some children could handle this, other children were thinking of different ways to get to China. They discovered that they couldn't ride a bike or drive a car, that they would have to take either a boat or a plane. They then called the airport for information about exactly how long it would take to get to China and which airlines they could use to fly to China. Books about China were brought in to school and every day the student teacher would read a different story about a Chinese child or children who came from China. The children learned a few of the Chinese letters and made beautiful paintings with special brushes and ink. They learned some Chinese numbers and began to do their math in Chinese numbers. Each child took a Chinese name and found out that names meant different things; each child took a name close to his own character. The children learned how to play different Chinese games like Chinese checkers.

* * *

We planned a trip to Chinatown but before we took the trip, I worked out with the student teacher precisely how we were going to get there. We also went down ourselves to see the things that would interest the children and then drew a map for them to follow which included the stops on the subway. Before we went on the trip, we talked about things to look for in Chinatown. We also discussed why groups of people settle and stay in one place together. Then we all went down to Chinatown, stopping at a Chinese bookshop on the way. The children followed their maps and once they saw something they would color it in. We went down Mott Street and they noticed different styles of clothing and Chinese letters. They saw the telephone booths that looked like little pagodas. We discussed Chinese architecture. We went into a small Chinese supermarket and the children went shopping for food that they were going to use to make a Chinese meal in school. When we got back to the class, we discussed the trip and they drew and they wrote about their impressions. Many books had been started and were continued throughout this time and even more books were started once they went to Chinatown.

* * *

I had brought back some instruments from Chinatown and used them during sessions on movement. The children moved with the sounds and listened closely. We also talked about very slow movement, using our hands to express slowness.

We then took time out to sit and listen to Chinese music on records. The children tried to hear the strange instruments, to hear the difference between Chinese music and western music. One child who had learned a Chinese dance taught this to the others. They noticed that there was much movement with the hands.

* * *

GAME was a supplementary resource. There the children made mobiles from clay using different Chinese letters, and they also made Chinese kites. We discussed the Chinese New Year and the importance of the different animals for each calendar year.

* * *

The Chinese meal was one of the highlights of this unit. After the trip to Chinatown the children prepared *lo mein*, which they found out meant noodle. They experienced foods that they had never seen, like roots and many spices. They did a lot of measuring and timing. They wrote down the ingredients, read the recipe, and then prepared and served a lovely little lunch. Each one had his own chopsticks which he was taught to use. That day, the children were allowed to use only their Chinese names.

* * *

Many of these details appeared in the children's books. The younger children wrote simple sentences, copying my writing about their Chinatown trip and including detailed drawings. Some older children got into more detailed writing on their own. Others who could not write extensively on their own were encouraged to dictate stories about what they had seen and experienced. There was time set aside where they could quietly sit and read each other's books.

* * *

We experimented with planting mung beans under different conditions: in the dark; in water; in soil; in the light. We found out that they grew best in the dark. I was surprised--as they were--since we were all familiar with different planting, and knew that most plants had to be grown in soil with light and water. Mung beans sprout very quickly over night. (This is very good for young children because they can see the growth right away.) Then the children prepared a salad with the mung beans as one of the ingredients. This was all described on an experience chart which was shared with the rest of the class.

Among results of our China study were: Photographs of the trip to Chinatown and writings about the trip, all incorporated into a large class book that contained the children's work and included drawings; the children began to think of Chinese things that they might have at home to share, such as a Chinese bowl; they became more aware of Chinese things. For example, when we went to the Cloisters as part of our medieval study, one of the children noticed there was Chinese writing on the museum notices. The children became more aware of the Chinese culture. But most important, the children stopped making derogatory remarks about the Chinese. Children from other cultures began to feel comfortable about their cultures and began to share them in practical ways in school.

Joan Eisenger teaches at P.S. 75, Manhattan.

A Pollution Study

GRADES 3, 4

Paul Mendez

The idea came from the children. For a few weeks before the study got underway, some of them had been bringing in individual projects they had done, mainly in the form of short written reports or cardboard shoe boxes showing scenes about pollution. They had been working on these special projects at home. When I asked the class if they would be interested in developing a unit on pollution--exploring what pollution is and what can we do about it--fifteen, or half the class, were excited enough to volunteer. One student, in fact, who had completed his own project on noise pollution, spoke to his mother about what we were doing, and the very next day that parent came in and told me that she would like to help us develop a unit. One of the first things we did together was to arrange a trip to a nearby vacant lot to look at the pollution and to study the life there.

Before our visit to the lot we had several small group discussions on the kinds of pollution that exist: air pollution, land pollution, water pollution, and noise pollution. With books borrowed from the library and lent by the Open Corridor advisor, I arranged a special section on pollution in the classroom library. I told the children that I wanted them to read something on pollution. Our discussions afterward were very specific and full of questions: When you smoke a cigarette and you throw it down on the ground, is that polluting? When you eat a candy bar and you throw the paper on the ground, is that polluting? We talked about the pollution caused by cars. All these discussions and questions were in their minds when the parent and I took part of the class on the first study trip to the lot. (The rest of the children were working on another project.)

I had prepared some questions on worksheets to be distributed at the lot. But when we arrived there, I gave the children time first to explore and find whatever they could find. After about fifteen or twenty minutes, I called them all back in a group and gave out the worksheets and some paper bags for collecting found objects. They collected pipes, pieces of cars, rubber--all the things that were polluting this lot. In the process, they also discovered how many things are alive in New York City--worms, plants and insects, for example--and later at school did research to identify them. We started to analyze what we had found, first setting up two displays, one of the things that polluted the lot and another of the living things

located there. Then we began writing about what we had done on this trip and what we had collected. I borrowed more books from the library; one in particular, about the land we live on and the harm we're doing to it, became very important to the class and was featured in the display.

We then took another trip, this time to study water pollution. The same parent joined us in a walk to the Hudson River. And again, before we left we had a session about the factors that can pollute a river. The Hudson, at first glance, looked grayish-green with no debris floating about. But on closer examination we found some paper and other garbage--enough to change the children's ideas about the river's purity. I made a mental note that kits for testing water would have come in handy at this point. As if to confirm our impression, we got a report from another class that had found dead fish in the Hudson and brought them back to school to study the effects of pollution.

Even though this project lasted a short month, the children were able to come to some conclusions--and to generate activities--around the leading question they themselves raised: "What should we do about this pollution and what should we do about the lot?" The two trips and the many discussions led to a surge of activities. The children wrote to Mayor Beame and other city officials asking if it was possible to have them clean up that lot. Then we drew up lists of suggestions about what could be done with that space. One child suggested that we make a playground out of it; another thought that it should be converted into a parking lot.

It was clear that the fate of that lot was very important to the children. When later on we visited one of the social agencies in the neighborhood, an agency concerned with housing and education, the children asked good questions of the director. "Why is that lot vacant?" "What does the City plan to do with it?" "Who owns the lot?" In the discussion that followed, they learned something about the history of the area and about what was going on in the community at present.

This project inspired still another trip, this time to the Museum of Natural History where there was an exhibit on the ecology of New York City. This exhibit was especially enjoyable for the children because everything in it was meant to be touched or handled. They learned about rocks and other natural building materials, about the birds, the fish, the insects, in fact all living creatures--all within New York City. And this visit inspired one of the exhibits that we set up in the classroom about animals in New York City.

An interesting extension from the pollution study was our work with the trundle measuring wheel. We took the wheel with us to the lot, walked around and counted the revolutions; in this way measuring the lot's length and width. Back in school we wrote it up. Then too, we made some models to scale of a playground or parking place. Finally, we drew up maps of the area. The project, which began with a study of pollution, gradually integrated *writing*, *math* and *social studies*, as well as outdoor activity. Small wonder that the title of our bulletin board was also the theme of the project: "A Vacant Lot Is Not Empty."

Paul Mendez teaches at P.S. 75, Manhattan.

Sex Education

GRADES 5, 6

Wilhelmina Wynn

The thread of my children's need to know about themselves runs through all their living and their learning. Helping them ask the questions and, sometimes, find answers is my own need, too, and my responsibility. I need to know the children as individuals: Which ones are more curious than others? Which boys and girls can handle talk about sex in a group? Which ones need private talks? What questions shall I refuse to answer? I remind myself that I can say I don't know when I honestly don't; I can say, "Ask your mother," when it seems clear that a family problem is being aired in public by my pupil.

Time is needed for trust. Sometimes it takes most of the school year for all of us to trust one another enough to talk about the beginnings of life, how babies are born, and how they grow into adults. A few children find it easy to ask questions even as early in the year as September. Living together longer gives all of us a chance to find out what we can learn from each other, from talk about shared experiences, public events, trips, and of course, books. Still, the urgency to know seems to strike the boys and girls suddenly and simultaneously. Girls who do not wear "training bras" look with curiosity at those who do; notes and drawings that are more and more being slipped to classmates are more and more expertly filled with forbidden four-letter words; fights erupt when the messages announce that "Joe goes with Vinnie."

PARENT REACTIONS

By springtime, most of the parents and I have met at least once, and they also know me from the children's reports to them. I do not send out a formal letter notifying parents that we talk about life and babies. But when I see them I ask them, often at the classroom door, if they object or if they will comment. Some of their replies have been: "It's all right with me. I'm glad you're telling her." "Very good. I'm glad they talk with you in school." "The boys talk too? You don't mind? O.K."

I encourage the parents to talk to their children and to read with them from books that contain information about the human body. In these ways, and in having their family hear their questions, the thread of the children's need is tied tighter to home.

SHARED EXPERIENCES

Children who want to know are alike

in their wonder. Their questions sometimes emerge as boasting statements told to a classmate. Or one child tells another a fact and then comes directly to me for more information. Or one precocious girl will tell the boys what she knows, and there is much giggling.

In a fairly common reaction, Juan wants to be shaken from his disbelief. He has been given considerable and accurate information by Jack, an older boy who is on the street a lot. Among many facts, Jack had told him that a man and a woman have sexual contact, and this is the way a baby begins. He had described such phenomena as the movement of sperm, the umbilical cord within the mother's uterus, the loss of the amniotic fluid before delivery. He did forget, however, that it takes nine months for the baby to get ready to join the rest of its family--a fact another classmate pointed out. There was a spirited argument about that, with Leroy contributing a description of his mother's distress when it was time for his baby sister to be born. Jack and Leroy showed me the GOLDEN GIANT BOOK OF BIOLOGY, locating the page with diagrams indicating the progress of a child *in utero*. When they were assured that it did indeed take nine months for a human infant to develop before birth, Leroy and Jack left, but Juan kept coming back saying, "I just didn't believe it! You know, about the man and the woman and the sexual intercourse!" I asked him what he had believed, and he said, "I thought the mother had both kinds of eggs in her, and when it was time for the baby to start, it just grew."

The year Ann spent with me she wondered if she would ever like being a girl. Our conversations came about naturally, when the boys went swimming once a week in the afternoon. One day Ann seemed very anxious to talk. She had a rash, she told us, and had gone to the clinic where she had experienced a frightening and painful vaginal examination. Some of the girls were upset, and I said that I could not promise any girl that she would not have an examination like Ann's, but that most girls their age did not. They might be less afraid if they would ask questions about clinic visits and examinations when they knew they were going. The following year, when Ann was 12, she came by to see me. She said she was all right now, and she was having her menstrual period regularly, just as the doctor said she would.

READING AND TV

One of the reading groups used the book SEVEN IS MAGIC, which includes the story, "Sky House." As we set the background for reading, one of the readers, himself a twin, asked if the boy and girl in the story might not be twins. A flood of questions came from the group: Boy and girl twins? How do twins get born? Is one twin a whole year older than the other? There were as many answers from the group as there were questions, and I filled in with information where needed: Boy and girl twins are called fraternal twins; twins are born like other babies, one at the time; one twin is not a year older than the other, only minutes older.

Each weekend, homework for the class includes selected television programs showing animals in their natural habitat. From this viewing children learned a great deal about sea creatures: Why does the father sea horse carry the babies? If the shell is the snail's skeleton, is he all soft inside? Betty

brings in her father's book, THE SHARK (by Jacques Cousteau), in which there is a picture of a beached shark. The scientists have cut open the dead shark and six or more young have been removed from her insides and stretched out on the beach at the ends of their umbilical cords. We study mammals of the sea, and later, when we talk about human babies, Betty says we must be mammals, too, since mammals have hair and nurse their young. Then we talk about fish and how they differ from mammals. The class has seen the television story of the Pacific salmon returning to its spawning grounds. They remember the courageous fight of the male salmon to save the female's life, and they know that savage energy, even though it may be violent, can also be life-giving.

TRIPS

For two successive years, my fourth grade classes camped for five days at Hudson Guild Farm in New Jersey. In the first few minutes, we could see that the children became part of the new environment. One boy jumped off the bus, rolled on the grass, and yelled, "This is where I belong!" They learned to throw back the too-small fish, to count bird's eggs in a nest almost touching the ground. They stood among the sights and smells of a milking barn and observed a calf only a few hours old. They stood close enough to bellowing bulls to feel their breath. At night, walking back to our cabins from the activity hall, the girls would decide which boys they wanted to walk with; the boys peeped into the girls' windows. Those same boys, half an hour later, wanted a teacher to tuck them in and say goodnight.

More than once, when the girls have gone to the toilet at a museum, one of them will come out with a sanitary napkin. Much whispering follows: "What is this? They didn't have any paper towels, so Jenny bought a napkin to dry her hands. What kind of napkin is this?" I promise to talk with them about it at school, and they ask me to keep it in my bag. On a day when the boys have gone swimming and the girls feel freer to talk, the time comes for me to keep my promise: I show them the napkin and the wrapper. I ask if they can read the trade name. Somebody replies, "Yes, that's what my mother buys for my sister when she pees blood." I explain that neither her sister nor any girl "pees blood." I tell them about a special opening in their bodies, called a vagina. In our conversations that follow, sometimes as long as half an hour, I try to clear up common misunderstandings, such as "babies grow in intestines"; I answer the frequent question, "How does she know who the father of her baby is?" When the girls are bursting with questions, but not daring to be the first to speak, I encourage them by asking, "Have you helped to babysit for a tiny baby? How did the baby look? You did notice that his head was soft on top? What did your sister tell you?" Many times the children have very good answers, and it is only necessary to make minor corrections.

When we get to the discussion of sexual contact, the children are not shocked. How does the baby start? I explain: The mother and father lie close together, so that their sexual organs are in contact--vulva (in which the vagina is located) and penis. The father's egg, called sperm,

goes through the mother's vagina and into the uterus, where it joins with the mother's egg, called ovum. Then the baby begins to grow. The children may ask for this explanation several times, and will understand what part of it they need. On the blackboard, I draw outlines of the uterus, tubes and ovaries.

Sometimes the boys launch a discussion. When, for example, they read a recent story in *Scholastic News Trails* describing the practice of limiting Little League baseball to boys, there followed a heated exchange about boys being better than girls, and of course, vice versa. Marty, who is usually very quiet, jumped up and yelled, "Women couldn't have babies if it wasn't for men!" And a girl quickly answered, "Yeah, but men can't have babies!" I asked the children if they thought men and women needed each other. Whether or not they all agreed, they seemed to stop and think about it.

The Health teacher at our school regularly arranged for classes to visit the Laboratory at Harlem Hospital. There we saw a fetus in a jar, and their attention was called to the umbilical cord, with the explanation that as long as the fetus was in the mother's uterus, it received nourishment through that cord. The children asked many questions, but they were not floored by anything they saw.

Our last trip for the year is a visit to the Jumel Mansion. As if to trap me into beginning the year all over again, the children ask me such questions as "How do you make a tree?" And Juan decides that he is crazy about the history of the Revolutionary War. Somebody wants to know if the birds were singing just like this when George Washington was here. Jeff wants to know if King George was related to Malcolm X. As at other times of the school year, I am not troubled by their questions. As long as children go on asking them, I can trust them to go on finding out more about themselves.

Wilhelmina Wynn, who teaches in the public schools of New York City, has worked in day care centers, foster home agencies, and schools for migrant children.

Inside Africa

GRADE 3

Shelley Price

Jane Soyer

The following excerpts are from work done by the authors at P.S. 191, as documented by their advisor, Elli Dumont, of the City College Advisory Service to Open Corridors.

Provisioning of Classrooms

Class 3-201

April 9

Books on display:

WONDERS OF NATURE (Parents Magazine Press)
AFRICAN CRAFTS FOR YOU TO MAKE, Janet and Alex d'Amato (Julian Messner)
THIRTY-ONE BROTHERS AND SISTERS, Reba Mirsky (Follet Pub.)
OUR FRIENDS IN AFRICA, John Hinds (New Dimensions Pub.)
WHEN THE DRUM SANG, AN AFRICAN FOLK TALE, Anne Rockwell (Parents Magazine Press)
THE KING'S DRUM AND OTHER AFRICAN STORIES, Harold Courlander (Harcourt Brace and World)
ANANSI THE SPIDER MAN, Philip M. Sherlock (Thomas Y. Crowell)
THE NA OF WA, Verna Aardema (Coward-McCann)

Looking around the room one could see:

Class 3-202

April 16

Label on library book shelf: *Read About Africa*

Display of books relating to Africa on round library table.

On wall, map of Africa

Near library table, a chart indicating pages in reference books that relate to Africa:

The Desert
Geography of Many Lands, pp. 55-75
Inquiring About Cultures, pp. 26-48
The Earth, pp. 117-127
Our Big World, pp. 98-110

On front blackboard a chart on which children sign up for the activities that interest them:

First Africa Project

Class 3-201

A large photo of an African Woman
A Map of Africa
Time-Life illustrated cookbook of African cooking
Spelling Word List including pertinent words such as Africa, continent, country
Tie-Dye with paper toweling on the window--bright colors in the sun
Display Table--with record: Bantu choral folk songs (Folkways Records)--with African sculpture (large wood, small bronzes)--with miniature animals (giraffe, tigers)--with record: *Drums of Passion*, Olatunji, (Columbia Records)
Chart written by the children, listing all the countries of Africa
Model letter on large chart paper:
Dear Sir,
We are studying about Africa. Could you please send us any information you have?
Sincerely,
Chart for signing up for committees:

Village	Maps
Letters	Mural
Cooking	Crafts
Cartoon	

April 16

A large chart: *Desert Vocabulary*, with definitions written in as children looked them up.

Africa	Sahara
desert	oasis
camel	dromedary
nomad	

Bulletin Boards:
African Book Reports
African Work Sheets - rexographed maps, desert vocabulary, etc.
Sign-up sheet (for working on various projects)
April Calendar (with pictures relating to Africa pasted on to indicate this was the current topic in April)
Display of African fabric pieces

Class 3-202

Map	Murals desert-jungle
Weaving	Reports
Art Projects	Play
Film Strip--nomads	
Mural--desert	Stitchery
Village--desert	
African Animals	

Chart with pertinent words--and room for children to write the definitions:

Africa	nomad
desert	camel
oasis	dromedary

Back Bulletin Board:
The Countries of Africa
map list of countries (45)
African Animals
pictures of African and Desert Animals

lion	leopard
hyena	camel

Also on Back Bulletin Board:
Some Information on Africa by David long typewritten report which he said he did at home using the Encyclopedia Britannica (and typed in school).
A Homemade Map of Africa by Ora done at home and brought to school
Egypt
pictures from magazines, etc. depicting scenes of desert, etc.

Side Bulletin Board:
Pretend you are going to the Sahara. What would you take and why?
Children's compositions with illustrations

Library Books available in the classroom relating to Africa:

THE LAND AND WILDLIFE OF AFRICA, Life Nature Library (Time-Life)
THE MUSIC OF AFRICA, AN INTRODUCTION, Fred Warren (Prentice-Hall)
THE ADVENTURES OF ANANSI, John Hines (New Dimensions Publishers)

Class 3-201

"Pretend that you are going to visit a family of nomads in the Sahara Desert. You will live and travel with them for a month. On the lines below list the things you would take with you and then explain why you would take each one."

A painting with the following caption: "A Jungle is a wild land thickly overgrown with bushes, vines, and trees. Many animals live in the jungle so that is what we did."

African Crayon Resist--several examples

Books of African Animals on display near the above-mentioned painting.

Beginning of an African desert scene made in a large drawer: sand with a pool (submerged dish with water) and several cacti embedded in the sand.

How to do a Crayon Resist:
(1) We colored a picture with crayons and pressed real hard
(2) We painted watery watery black paint over it.
(3) We washed off black paint under running water.

Records near record-player:
The Music of Africa Series Uganda I (International Library of African Music)
African Village Folk Tales, Vol. 2 (Caedmon Records)

Weekly trip to the school library--brought back:
THE STORY OF AFRICA, SOUTH OF THE SAHARA, Katherine Savage (Henry Z. Walck)
TIGER STRIPES AND ZEBRA STRIPES, Julian May (Creative Education Society, Minnesota)

Class 3-202

TALKING DRUMS OF AFRICA, Christine Price (Scribners)
THE KING'S DRUM & OTHER AFRICAN STORIES, Harold Courlander (Harcourt, Brace and World)
NEW AFRICA, A WORLD BACKGROUND BOOK, Ellen & Attilio Gatti (Scribners)
TIME-LIFE AFRICAN COOKING, Laurens Van der Post (Time-Life)
THE HAT-SHAKING DANCE & OTHER TALES FROM THE GOLD COAST, Harry Coulander (Harcourt, Brace & World)
LET'S GO TO AFRICA, Charles Mercer (G.P. Putnam)
PLAYTIME IN AFRICA, Efua Sutherland (Atheneum)
ELEPHANTS, Herbert Zim (William Morrow)
OUR NEIGHBORS IN AFRICA, J. & E. Caldwell (John Day)
ANANSI THE SPIDER, TALES FROM AN ASHANTI VILLAGE, Peggy Appida (Pantheon)
THE FIRST BOOK OF AFRICA, Langston Hughes (Franklin Watts)
THE LAND AND PEOPLE OF TANZANIA, E.M. Kaula (Lippincott)
EQUATORIAL AFRICA, Glenn Kittler (Thomas Nelson)
THEY LIVED LIKE THIS IN ANCIENT AFRICA, Neurath & Worboys (Franklin Watts)
OLODE THE HUNTER AND OTHER TALES FROM NIGERIA, Harold Courlander (Harcourt, Brace & World)
BLACK FAIRY TALES, Terry Berger (Atheneum)
CHILDREN OF AFRICA, Louis Stinetorf (Lippincott)
DUEE, A BOY OF LIBERIA, G. Warren Sloat (Knopf)
THE TRUE BOOK OF DESERTS, Elsa Posell (Children's Press)
THE DESERT, Life Nature Library (Time Life)
EARLY MAN, Life Nature Library (Time Life)

Outside Bulletin Board:
The Desert and Jungle in Africa (painting)

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Class 3-201

THE COW TAIL SWITCH AND OTHER WEST AFRICAN STORIES, Harold Courlander and George Herzog (Henry Holt)
WILD CATS, C.B. Colby (Duell and Pearce)
LION ISLAND, William Bridges (William Morrow)
KATIES' ZOO, Jory Graham (Encyclopedia Britannica Press)

Addresses which children found in telephone book to send letters requesting information:
Air Afrique
Swissair
Kenya Tourist Office
African Information Service
African Tribal Arts Gallery
Ethiopian Airlines
Travelword
U.N. Mission for Chad, Gabon, Congo, Algeria, Cameroon, Ghana
African-American Institute

April 23

Chart:
"Africa is full of animals and native people. There is a big desert, jungle and plants."
Chart:
"West African Cooking"
dish country ingredients cooks

Back Bulletin Board:
"Some exciting African animals"
Pictures from magazines with reports written by children

Several new African games:
Ashante Tic-Tac-Toe
African Tic-Tac-Toe from Rhodesia
Kalah (Awari)

A model of the African desert was being made. Clay figures were added to sand, cactus and pool of water: desert rat, snake, skull of animal with horns. Also a tent made of popsicle sticks and fabric.

Class 3-202

April 23

Bulletin Boards:
Children's reports and their illustrations
"People of the Desert"
"The Nomads of Africa"
Display of reports and rexographs
"Let's Read and Learn about Northern Africa"

"The News":
current events bulletin board with articles from newspaper relating to Africa

Display:
"Welcome to Africa" with 2 large photos of African women
"Another Trip to the Museum" with pictures and reports

Class beginning work on mural of the desert

May 14

Back Bulletin Board:
Resists...African Designs
How to do a Resist (with art work)
Another Trip to the Museum (with typed reports)
African Animals (with magazine pictures and children's writing)
God's Eyes from Nigeria (with three samples and directions)

How to Make God's Eyes
First you take 2 straws and staple it together in the middle. Take some yarn and wrap it around the straws and keep going until you get to the end. Take another piece of yarn until you're at the end.
From Nigeria by Dewanda

Countries of Africa
(with map and list)

Class 3-201

Stitchery mural was continuing.

Chart:
"Who can play Kalah?" As children learned, they put their names down.

Bulletin Boards:
"Some Big Cats" (with pictures from magazines)
"African patterns" (fabric pieces on display)

May 4

Bulletin Boards:
African Book Reports
Calendar (surrounded by reports about Africa) Tyrone's African Words (cut from magazines)
African Work Sheets
Photo of an African sculpture:
This is an African sculpture.
It is made of wood.
Art is very important in Africa.
In an African folk tale the first man was a sculptor
Who carved the first woman from a tree. By Kelley

African patterns (with stories and reports)
Pretend...desert
Reports on Museum of Natural History trip
African Animals (with information about them)

Art Table set up for Tie-dye.

Back Bulletin Board:
Some Exciting African Animals:
(pictures with stories)

West African Cooking chart:

Dish	Country	Ingredients	Cooks
rice	Ghana	rice, beans	Gloria
beans		coconut	Lea
pine-apple		chicken	Redella
chicken		rice	
		turmeric	
		pineapple	

Class 3-202

Chart:
We tasted dates and they were...

good - Yolanda
dynamite - David
excellent - Tyrone
delicious - Jason
didn't like it - Debra, Lawrence, Eddie, Dwight

Joloff Rice with Chicken
Comments:

Reyanaldo	I like it because of the rice
Diana	Yuk! Yuk! Yuk!
Dwight	Good

Work in progress:
Models of African village
Desert
Clay animals and utensils

Charts:
Jungle Words
Desert Words

In Reading Area:
African Relief Map (with story alongside)

Children's Activities

Individual	Whole Class
Model of the desert	Trip to Afro-American Institute
Model of a jungle village	Tie-dyeing
Mask-making	Predators & Prey (zoo)
Tapestry	Batiking
Yarn designs	Collage in shape of Africa
African puppet show	
Weaving god's eyes	
Diorama of grasslands	

Comments

ON BEGINNINGS

Teacher:

We began the whole study of Africa by taking the kids to see a musical called "Black Journey." This kick-off point helped tie together "here" and "there." Back in class we talked about Africa, about its different countries, and their topographical features. Then the children made the maps--painting a topographical map, constructing a relief map.

After talking about the continent as a whole, we divided Africa into major regions and began to discuss each part, especially about the desert of Northern Africa. We did a lot of comparing--of what life would be like in the desert to life here. We're going to end up with a huge chart showing the comparison between the desert, the Arctic, the rain forests of Africa. We'll put in the differences and the similarities--in terms of food, transportation, family life, etc. There was a great interest in animals and we discussed at length and often which animals lived where. Children have so many misconceptions--that elephants and lions are all over Africa, for instance.

Student:

First we made the outline and where the mountains and lowlands belonged. Then we made the mixture out of flour salt and water. Then we started making the mountains, then the lowlands and the rest. Then we let it dry and did the rest

the next day. Then we painted it. Then we made a legend to tell you what color everything is. Then we put the finishing touches on.

ON COOKING

Teacher:

Cooking is something we do with everything we study. We tried to find recipes from many different regions of Africa: yams, fruit fritters, mango snow, beans and rice, jolloff rice with chicken (Ghana), peanut soup (Zaire). To get the fruit a small group went on a mini-trip to the Essex Street Market with the student teacher.

* * *

We did a lot of cooking and I tried to keep it as authentic as possible: pounding the yams, using dried fish and rice. Mrs. Godfrey (a parent) came in and cooked chicken with a group of children. She made the pineapple chicken with rice; and the children just adored her! All the recipes will end up collated in the individual cookbooks for each child.

ON MODELS

Advisor:

Models of African desert scenes were constructed in both classes. Children made palm trees of paper and added a well that "worked."

Teacher:

Modeling has been a theme throughout the year. The models were becoming more and more proportionate, realistic and detailed. For the desert, children made dishes and a fire and a well and all the minute things that would be needed in a desert village. Every time they worked on it they would see more and more things that were needed. We went back to the Museum of Natural History in small groups to see the dioramas there. I've observed that children will sign up to work on something and others will join them. Sometimes a couple will start something and the ones who actually do the model or the mural and finish it are entirely different children. I think the children are getting a lot of information from the models and the art work. One kid who worked on the mural (of the desert) a great deal is a kid who won't write a report--a competent child--but, from that mural, he went to books and learned a lot and could really tell how people lived.

Student:

A Desert Poem
The wind blows sand around.
The sand blows in tents
And in the animals' eyes.

Advisor:

Models of African grassland villages were made in both classes--with real grass, grown from seed, and huts made out of mud and straw. A completed chart shows many varieties of shelter in Africa--from grass huts to skyscrapers!

Student:

We used seeds for planting the grass and we got the soil outside with Mr. Becker. The grass really grew fast! Then it got too long and we had to cut it. We wanted it to be long so it would be like a real village and the snakes could be in the tall grass. Then we made the huts out of cardboard and we got bamboo and put it around. Then we made clay figures--snakes, people, animals, fire, food, baskets, and a drum.

ON TIE-DYE

Advisor:

Tie-dye was tried by everyone, much as it is done in Africa even today. The beautiful cloth was later cut in the shape of butterflies and used to make lovely Spring mobiles.

Teacher:

First we did tie-dye and then batik. We had seen tie-dyed material at the Afro-American Institute and had read about it in books. A piece of tie-dyed material or the batik work will cover the African cookbooks we are making (all the recipes we've collected from various parts of Africa). Then, with the fabric that's left over, children will have the choice of making a beautiful picture by framing it or making a bean-bag or making an African neck pocket, a pocket on a string worn around the neck and a favorite place where South Africans put their small treasures (as described in THIRTY-ONE BROTHERS AND SISTERS).

* * *

The tie-dyeing really came out of the trip to the Afro-American Institute. A small group of kids went there and it was very valuable because what came out of it was all the different ways the Africans prepare cloth, decorate it, and use it. We talked about "resist" and we did it, first with paper and then with cloth. We tried to duplicate what the African artists do. First we used store-bought chemical dyes and then we used natural dyes--tea, strawberries, grapes, turmeric, and onion skins.

ON AFRICAN MATH

Advisor:

Games of logic and mathematical skill from Africa were played with great enthusi-

asm: Ashanti Tic Tac Toe, Kalah, Shisima were made by the teacher and used by all the children.

Teacher:

I found the book, AFRICA COUNTS by Claudia Zaslavsky very useful--very clear, with good ideas for games. And the children really liked them. They've used them at the Math Fair! The Kalah, or Awari, game is a great favorite. Tyrone made the box for it out of an egg carton. And I had a chart listing each person as he learned how to play it.

* * *

The ideas for the games came also from THE FESTIVAL BOOK. The games were used in the Math Fair and they went over beautifully! People really loved them. The kids like the strategy games. They begin to think of moves in advance a few times--and they get very good at it.

Student:

There were two tic-tac-toe games--one was African tic-tac-toe and the other was called Ashanti tic-tac-toe. The African one was like real tic-tac-toe, but you needed four markers. On the Ashanti tic-tac-toe you had 12 stones and if you got three in a row you could take one away from your opponent. You win when you have only two beans left.

ON AFRICAN ART

Advisor:

A display combining many traditional art forms from Africa focuses on *patterns* and their many variations. Instructions for doing printing, stenciling and crayon resist are part of the display.

* * *

Gods' eye, a traditional Nigerian art, was one form of weaving done by the children. Next to a display of their work is a map of Africa with a guide for funding major regions.

Teacher:

First of all we looked at a lot of African art in different books. And we looked at fabrics. The children started to get a feeling for what African art looked like and the different types and techniques. I was particularly pleased when a child noticed a design in a book (which was not really African) and said, "Hey, that looks like African material!" They began to sense what looked African, what looked Carribean, etc.

We went to the Afro-American Institute to see fabrics and we looked at the geometric patterns and compared them to others we had seen in books. We looked for patterns, and I wanted the children to be conscious of the repetition. Again this related to the whole question of design, color, what makes something look "African." It was an activity where the two third grade classes worked together on a project. We found this diffficult to do, but I felt that the children thought of it as theirs--they were very much involved in doing it. Also when we listened to the music of Africa, we listened for repetitive patterns, so it all tied together. In the poetry, too, I stressed the patterns, the rhythm of the words.

Student:

Stenciling: First draw your design on the cardboard. Then cut it out. Place it on a piece of paper and then paint it. And then pick up your design.

Advisor:

The tapestry which was done by children of both classes utilized felt, cut into shapes of birds, animals, boats, warriors, trees that were glued on a fabric background. Children tried to capture the spirit of the African tapestries they had seen at the Afro-American Institute.

Children made designs of colored yarn glued on canvas backing--based on traditional African forms. Geometric and repeated patterns were made by children from both third-grade classes, working in the corridor.

ON ANIMAL LIFE

Advisor:

Chart made after a trip to Central Park Zoo for a guided tour of Predators and Prey.

Teacher:

The trip to the Central Park Zoo for the guided tour of Predators and Prey was ideal. We asked the children to focus on African animals and which ones were prey to which. When we went to the Bronx Zoo we went to the African Plains and saw many other animals not available at the Central Park Zoo. We specifically went to see the African animals. We saw giraffes that were absolutely beautiful!

Student:

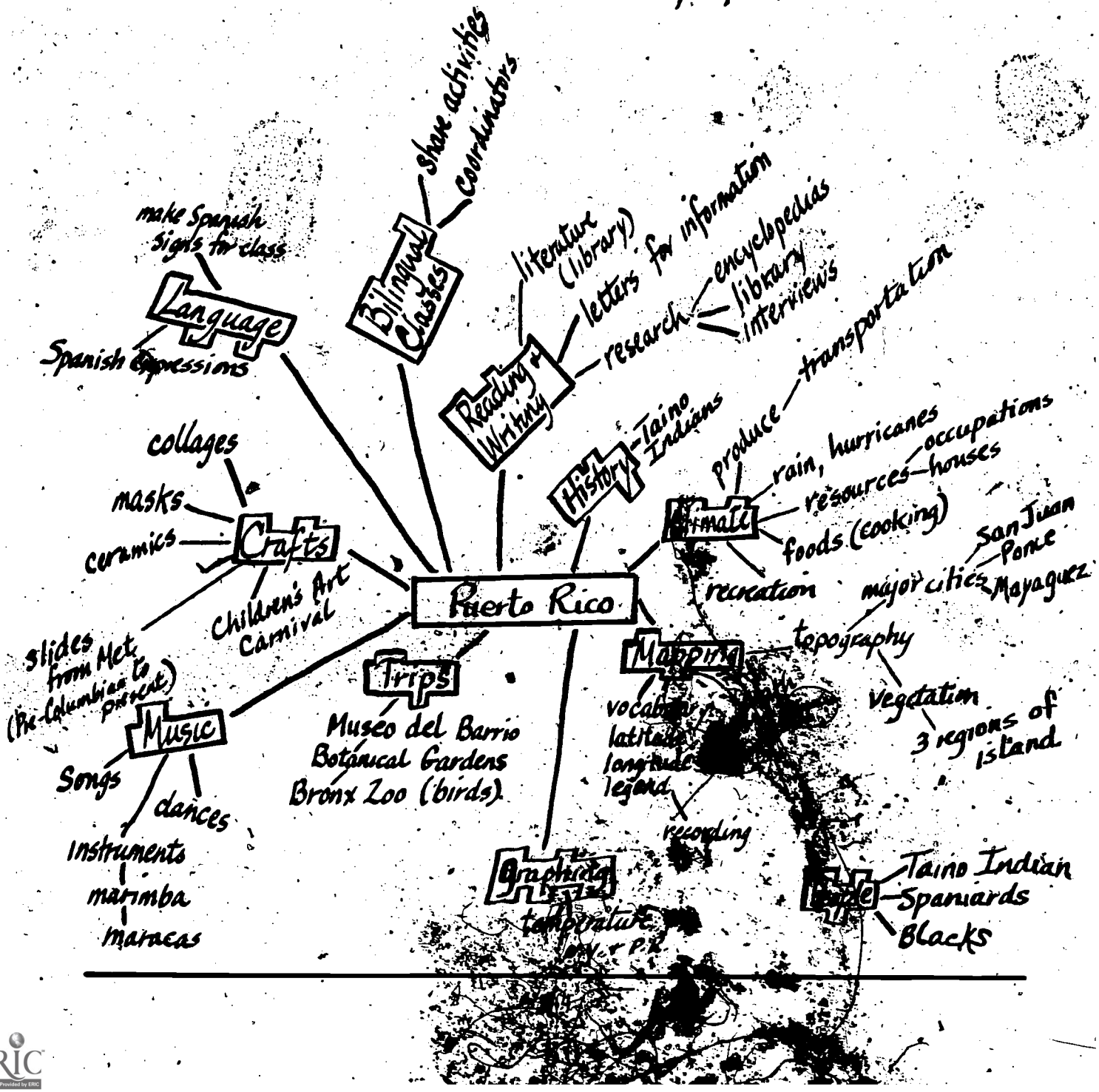
We went around the zoo and saw lions and a zebra and monkeys and a llama--and elephants. The elephant took a peanut and spit it at us and it got on the lady's pants!

A Look at Puerto Rico

GRADE 3

Jane Soyer

Teacher's initial chart of possibilities.



Children's Activities

In a discussion with the advisor, the teacher told what actually did get done relating to Puerto Rico:

Trips: Botanical Gardens (Bronx)

- Saw tropical plants (bananas, oranges, coffee, etc.)
- children could really feel the difference in the air (humidity) between the tropical vegetation house and the desert (dry air) house. The difference was palpable, feelable, concrete. Discussion related to Puerto Rico as a tropical climate.
- Later, there was an article in the New York Times telling of plans to close down this tropical display for renovation. The children read and discussed the article.

Museo del Barrio

- plans fell through - but hope to go in Spring.

Spanish grocery store

- small group went on mini-trip to Hispanic bodega with Hispanic children as 'guides' to buy plaintain. Weighing, pricing, paying. Hispanic children (Steve + Ipsimi) helped choose proper kind.

Bronx Zoo

- to see tropical birds (not necessarily native to Puerto Rico, but typical of tropical regions). Later made reports on birds.

Cooking: Fried plantain

Cracked coconut — coconut cookies

Tasting
- pineapple
- grapefruit
- coconut
- plaintain

Chicken and rice - Denise Rodriguez' mother, a Puerto Rican parent, cooked this with the class

Art: - At Children's Art Carnival, some work was done related to Puerto Rico.

- Murals: stitchery
  painted

- Collage - made of Puerto Rico scenes from literature children received by writing for information.

- Pictures of tropical birds

Music - learned Spanish songs: "Las Mananitas"
"Pollito, Chicken"

Mapping - made map of Puerto Rico
- needed math for making it to scale
- used estimation, then measuring
- used naked eye to judge scale - how much space do we need

Reading/Writing:

- children wrote letters to travel bureaus, government agencies, etc. to request literature. Used material for reports, displays, booklets, research, etc.

- daily calendar ritual extended to writing days in Spanish
- signs around room in Spanish
- Teacher read, "Lonely Maria".
- Book reports on books related to Puerto Rico

Math:

Compared temperatures in San Juan and New York (in New York Times) and graphed it over a period of several weeks.
Found little difference in daily temperature in San Juan, but great variation in New York.
Later extended to comparison of New York and Alaska.

Involvement with Bilingual class:

Borrowed ($5.00) lovely set of slides from Metropolitan Museum of Art on Art Heritage of Puerto Rico which was done in conjunction with Museo del Barrio. Showed to class and invited third grade Bilingual class to join.

THE PRECEDING ITALIC WRITING WAS DONE BY ELLI DUMONT.

THE FOLLOWING SECTIONS PRESENT ADDITIONAL DETAILS FROM THE RECORD OF A TEACHERS WORK WITH CHILDREN.

Comments

ON TOPOGRAPHICAL MAP

Teacher:

The children worked very hard on a topographical map of Puerto Rico. A great deal of math was involved, and it was a real intellectual exercise. They figured out that each space was equal to 3 miles. They did a drawing on smaller paper to get the feeling of the shape of the island. Then they transferred it to squared paper for the real map. They moved on to the peg board and they built it on that. There was a lot of interest in maps. We had earlier made a map of the corridor and of the school yard, and had taken a trip to the top of the Gulf-Western building to see the grid of the streets below. We had talked of the different ways to make maps, too.

Student:

The class made a big map about Puerto Rico. We used sawdust, warm water, and plaster of paris, and mixed it all together. We plotted out three layers, and then we painted the bottom yellow, the middle, green, and the top, black. The black was the high mountains, the green was the grass, and the yellow was the sea level.

ON PUERTO RICAN VISITOR

Teacher:

Elsie Gonzalez (Bilingual Community Liason) visited the class and gave a very nice history lesson on Puerto Rico. She showed maps and pictures. It was good for the children to hear her talk, for even though they had read about Puerto Rico and looked at pictures, hearing about it from someone who was so emotionally connected with the island, meant a great deal to them. They were very attentive the whole time that she was here.

Student:

Mrs. Gonzalez is a Puerto Rican; she came from Puerto Rico. She asked how many people had ever gone there. She told us who were the first people there, like the Indians, then the Spaniards, then the Africans. She told us how long it would take for somebody to go around the whole island.

ON GRAPHING TEMPERATURES

Advisor:

Graphing temperatures in San Juan, Puerto Rico and in New York. The New York Times Weather Report of temperatures all over the world was consulted. Instructions tell how to graph temperatures and compute the differences. Work sheet nearby for daily notations and computations.

Teacher:

Graphing was another way of understanding something of temperature. It was very interesting for us to see that in New York City there were great differences in temperature--it would go up and down--but Puerto Rico's temperature stayed pretty constant. And we did find the differences. And since we were working on subtraction with exchange, it gave it a lot more meaning. We had to find differences.

Student:

Each morning Mrs. Soyer was bringing in the newspaper thing. I forget what it was called. And we found New York and Puerto Rico, San Juan. It would tell how cold it was in New York and how hot it was in Puerto Rico. And the difference would be the temperatures. We had a graph paper and found the day and the temperatures and found the line and put an X and then drew a line to connect the days.

ON TROPICAL BIRDS

Advisor:

Reports and drawings of tropical birds, after class trip to Bronx Zoo, World of Birds, were put on display.

Teacher:

This was another part of learning about the tropics. Certainly the birds were not all from Puerto Rico. They just saw what tropical birds were like--and that Puerto Rico was a land of the tropics.

Student:

We went to the Bronx Zoo World of Birds to see the bower bird and other birds. It looked like a jungle and it felt like the jungle. One bird flew out of the cage. We drew pictures and then we took paper and made trees and put the birds on the trees. They were the bald eagle, the Torrent Duck. Then we did reports on them. I went to the library to Mrs. Friday and asked her to give me all the bird books.

ON STITCHERY MURAL

Advisor:

Stitchery murals--of Puerto Rico and of the Arctic--were displayed in the corridor, side by side for contrast.

Teacher:

For the stitchery mural, our class did the part of the tropical land--Puerto Rico. That activity made the children more aware of what a country looks like. They enjoyed it very much and there was a lot of feedback from them.

Student:

Gloria and Allison, Chris and Jacob and me worked on the stitching mural, and Mrs. Dumont. And Mrs. Soyer helped one time. We cut things out of fabric and we made a picture. Then we made the sand. We put glue on the on the fabric and smeared it around and then we put the sand on. Here are some of the things we made. We made a coconut tree, a boat, sand, sun, some clouds, an airplane, grass, flowers, coconuts and water. All on the mural.

Reading Activities

GRADE 5

Frank M. Lupo

Reading is a tool, not a subject. This slogan, coined by my open education advisor, not only confirmed my own approach to reading but helped me plan what became, over the year, a successful reading program. What I did not realize, starting in September, was that the children of my class would play a substantial role in teaching *me* what is effective reading instruction. True, I had absorbed valuable ideas and insights from my courses in open education and from my experiences working with the Open Corridor Advisory Services. But I discovered that only children can tell us what makes them want to read. This demands observing what motivates, excites, and turns them toward reading; bringing professional experience and knowledge to bear on such observation; and creating a child-centered, supportive learning environment, an environment rich in planned materials and equipment, which allows a child to use fully his or her creative intelligence.

The kinds of reading described below were developed in part from child direction. I can vouch for the interest and enthusiasm for reading they generated in my students.

PEER READING

A standard operation was assigning a creative writing topic, correcting the results for a single major error, and returning them the next day. Occasionally, I read a few of these writings to the class and as I read, I saw the smiles and sensed the interest and pride of each child as he heard his words read aloud. I realized then that I wanted the whole class to have this positive feeling as part of their reading. So, a few days later, when the class was given another creative writing topic, I typed all the compositions on a rexograph master, correcting mistakes and including each child's name in capital letters after his or her work. When I distributed the rexograph sheets at our next morning meeting, I wasn't sure what the reaction would be. The first thing each child did was to look for his or her name and to read his or her own composition. Then he read the writing of the other children, and one could hear a pin drop except for occasional laughter when children were reading a humorous piece. The peer reading sheets gave them a prideful sense of authorship; many of the children had never seen their writings typed before, and it gave their work a heightened sense of importance.

Another benefit became clear when I assigned a creative writing topic to be written in the classroom. The children wrote with much more

concentration and enthusiasm, anticipating that what they wrote would be typed and would appear on a peer reading sheet. I tried never to disappoint them; peer reading became a weekly experience for the children.

Through the year, I made some changes based on their reactions. When the single creative writing topic was not always appealing to all children, I gave them a choice of three topics. Gradually, I began eliciting topics from the children themselves, and on occasion, I would use story starters for the writing that became peer reading.

Finally, after peer reading had been a regular part of the school week for about two months, I discovered that as a boost to their handwriting skills, the children enjoyed rewriting their composition, with all mistakes corrected, as it appeared on the peer reading sheet.

EXPERIENTIAL READING

Since the second week of school, we have had a large turtle in our classroom named Timmy. We inherited him from last year's fifth grade open classroom. The children were fascinated with Timmy; he served as a motivation for many science discussions; and I figured he could be an excellent stimulus to reading. I located a booklet on turtles, but soon discarded it because the vocabulary was too difficult and the snytax too advanced. What's more, I found the point of view of the booklet objectionable, including as it did a discussion of how turtles provide excellent meat for turtle soup and their shells, excellent material for jewelry. I was faced with a class of children who were very interested in turtles generally, and Timmy specifically; with no immediate readings available. In one night, I rewrote the facts from the booklet that were objectively accurate, added our classroom experience with Timmy, and typed it up on a rexograph master. I was concerned about the children's understanding of its content, so I included comprehension questions similar to the format of a standardized reading test.

The next day, we read the rexograph sheet as part of our discussion of Timmy, turtles, and reptiles. At the end of the class meeting, one child asked when we were going to read about goldfish. (An aquarium had been set up that week in the science area.) With that question, I saw the potential of similar readings based on other classroom animals; I began making efforts to get more animals in our class.

Once the children put me on this track, I began viewing all classroom experiences as suitable for reading. Through the year, the experiential reading varied from description of centerpieces we made for a P.T.A. dance, to accounts of trips to a zoo or a museum, to stories about tadpoles in our science area, and to a report of an African Thanksgiving Ceremony conducted by the father of one of the girls in the class.

I gradually became selective in those experiences that I would use for experiential reading, emphasizing those that were rich in language and that proved most interesting to the children.

FUNCTIONAL READING

My continuing concern was for structuring my open classroom with materials, equipment, and books to create an enriched learning environment, that was truly functional for each child. I focused on how the

children's activity in this open, enriched environment could be better related to reading. I began by using project task cards that were commercially produced, to which were added arts and crafts books. Although this procedure was productive, the reading was limited to only those children who were directly involved in the project or task. In order to allow more children to read the instructions so that more could execute a project, I began typing and rexographing directions to simple arts and crafts projects which were read by the entire class. In addition, I would demonstrate the construction as the directions were read. After my demonstration a small group of children would reread the direction and construct the object, basically on their own, with occasional guidance from me. This reading in order to function successfully in the doing of a task came to be known as functional reading in our room.

Tasks were not limited to making things, but included following directions for playing chess or other games, or following instructions in order to make French toast or pizza. Much of the functional reading came from craft books, cookbooks and teacher-made task cards in science and social studies. But when one child initiated and completed a project on his own that captured the imagination of the class, I would write a functional reading sheet in response to the children's interest in the project.

With more and more successful experience in functional reading they were able to read directions on their own and complete the task or project. The children became more confident and began studying craft books, task cards, and resource books on a regular basis. They looked for instructions to read in order to complete a project or task that especially interested them. This demanded that I reexamine the materials in the room, the various books and task cards to make sure that a child who wanted to start a project after reading the directions would not be frustrated because needed materials were missing from the room. For functional reading to be continually successful, I had to restudy the room itself regularly to keep it supplied with relevant materials that made it functional for the child. This new understanding was very important for me as an open classroom teacher: previously I had thought that developing a planned, enriched learning environment was simply beginning and ending the process at fixed points. I know now it is an ongoing process that starts in September and continues to June--if my classroom is to stay alive and functional for the children.

INDIVIDUALIZED READING

Over the past four years our Open Education Program purchased an abundance of multi-level reading kits; our classroom included many and varied reference books. The task at the beginning of the year was to organize all of this material into a functioning classroom library. I involved the children in the work of arranging the books so that they would become familiar with the structure of their library. I placed large cardboard boxes in the middle of the classroom and labeled them: paperback fiction; paperback nonfiction; hardcover fiction; hardcover nonfiction and reference. Once the books were sorted into their correct boxes, these were placed in different sections of the library according to their category. Then, to my surprise, I noticed that the library had little interest to the children. After school one day, I took another

look and realized that almost all the books were stored in cabinets in such a way that they could not attract the children's attention. Although required reading was done each day, I wanted the children to seek out books on their own, and so I displayed some books on top of the cabinets, but by the end of the school day, most of them had fallen down. Faced with the problem of a secure display, I was forced to get creative! I used spring clothes pins attached to pipe cleaners and fastened to various places around the library. I ran string, with clothes pins attached, across the length of the library. Once we had an inviting, attractive display, I began to see an improvement in the children's reading on their own. In addition, I used a vertical book rack that had been constructed the previous year by the children.

But much more work on my part was needed to spur them to independent, self-initiated reading. I began reading to them regularly from the displayed books in the library. We dramatized some books to involve the class in their plots. I used the children's interest in drawing and made up a reading report form which included a blank section for the children to draw and color a picture about the book they had read. All these techniques almost backfired; I was requiring them to write too many reports, and they were becoming resistant. Eventually I limited reading reports to twice a week and the problem seemed to be solved as their reading on their own picked up.

Although the reading described above, was working well, the interest did not become intense among the slower readers until I purchased four Walt Disney Golden Books and brought them to class. The subjects of these books were Donald Duck or Mickey Mouse, or full-length films such as The Love Bug or Bednobs And Broomsticks. The children's reaction to these books was overwhelming. I read one book to the class, then displayed it in the library along with the other three which I simply highlighted by showing some of the pictures. One problem that I enjoyed resolving was having two children tug at the same book, each saying, "I saw it first!"

Each week I added two or three new titles. This gradual introduction of these Golden Books resulted in the children's interest and enthusiasm being repeatedly stimulated. Over a period of four months, I accumulated about thirty Golden Books and other small books which came to be known as mini-books in our classroom. When they wrote reading reports using these mini-books, they traced the picture from the book onto the reading report form. Although I thought this procedure was not too creative, I encouraged it because it was a successful part of their high interest in reading. Eventually many in the class abandoned the tracing and began drawing free-hand with remarkable success. The children had taught me that they traced when they felt they had to, in order to reproduce the picture. But after many tracings, they became knowledgeable enough about shape, form, and scale so that they could draw pictures freely.

After about a month the mini-books stale in interest for the children because all of them had been read. The children thus taught me another important point: At a certain point books which have already been read must be removed and the process of gradually introducing different books, with the teacher reading or highlighting them, must start again.

I have given considerable thought as to why the mini-books were so popular with the children of my class. It wasn't that they were easy to read; in fact, most included a difficult vocabulary with challenging syntax. It was that the subject matter was related to cartoon characters or movies they had seen on television. If I were a publisher of children's books, I would produce a basal reader containing stories and pictures of all the popular cartoons and shows on television.

AUDIO-READING

Thanks again to an Open Education Program purchase we possessed six Scholastic Record-Books in our classroom at the beginning of the year, with five headsets. Part of the job of organizing the room was to set up a listening center where one child could listen to the book on the phonograph as he read along. Shortly after such a center was set up and the children began reading and listening to books, a problem developed: With three or four children crowded around one book, some gave up trying to read the book and just listened to the story. It was obvious that this audio-reading was very popular with the children. I obtained additional copies from the school library for three of our record-book sets, enough to create audio-reading packets of five books per record. Again, however, with three books being read by the entire class in less than a week, the children lost interest in audio-reading.

With some remaining funds we purchased four record books from Scholastic and ordered four additional copies of each paperback. The packets, stored in plastic bins inserted in cabinets on wheels could be easily shared among the open classrooms.

Audio-reading was so successful in my class this year that I am now busy surveying catalogs of other book publishers so as to add new audio-reading packets to our open classrooms.

READING AND TAPING

Early in December I brought my cassette tape recorder to class to record the singing of Christmas songs. One day, after this singing activity was concluded an and we were departing for the library, I asked two boys to stay behind to clean the turtle tank. I returned to the classroom a few minutes later and discovered the two boys in the classroom library with my cassette tape recorder, taking turns reading pages from one of the mini-books. When they saw me they became tense, knowing they had taken my tape recorder without permission. I was so struck by the sight of these boys, who were slow readers, now reading with considerable enjoyment and enthusiasm that I said, "Hey! That's a good idea!" I allowed them to finish reading the book into the tape recorder, and we listened to the recording together. The boys were very proud of their accomplishment. I began planning how to incorporate this activity into our reading program.

The next day I chose one good and one poor reader to tape a book together in the corridor where it was quiet. I deliberately created this pairing with the hope that the good reader would assist the poor reader. After the taping, the two children would bring the recording to me and we would listen to it together. Sometimes, I would listen to it at

lunch time or after school.

Reading and taping quickly caught the imagination of the class. It was particularly useful to me: I could listen to more children reading each day by playing the tape recorder at times when I was not with my class. Reading and taping continued for five months until the cassette tape recorder broke. Although 28 ten-year-old children handled and operated the tape recorder for five months, it broke when I accidentally dropped it. When I get the tape recorder fixed, I'll make it a class rule that the teacher can't touch it!

SUBJECT READING

The children of my class of course read texts in social studies and science, but these were secondary to the readings supplied: I typed and xeroxed a few comprehension questions, lists of possible projects, activities, and report topics and reproductions from other books. These reading sheets were stapled into each child's science and social studies folders. The advantages to this individual-folder approach were many: I could tackle the children's comprehension skills directly; include commercially made rexograph diagrams, charts, maps, illustrations to complement the readings; encourage application, reinforcement or better understanding; suggest individual research reports for the more advanced children; present fifth-grade curriculum concepts and understandings in a reading that was below fifth grade level, yet enable all the children to comfortably read it since I had a heterogeneous class where the reading levels ranged from 3.5 to 8.5. Finally, individual folders were kept in the room, so that I could check the children's work in my free time, and I found that teacher-typed readings made me more knowledgeable about the subject matter.

Although this approach involved a considerable amount of work on my part, it was a one-time job since these reading sheets may be used again with some additions and changes.

These activities--all of them related to reading as a tool--were based on clues the children themselves furnished. The direction they pointed me to, I now realize, has great potential for developing a strategy that not only substantially improves the ability to read, but gives children the self-sustaining enthusiasm necessary for lifelong enjoyment of reading.

Frank M. Lupo is Open Classroom Coordinator at P.S. 11, Brooklyn.

A Flight Project

GRADES 4, 5, 6

Michael Tempel

I had several reasons for choosing a Flight Project. First of all I'm a pilot, the subject interests me, and I know a good deal about it. Secondly, I feel that a project for elementary school children needs a good material base. Model planes are not expensive, are readily available, and are excellent replicas of the real thing. The tools needed to work on them are fairly simple, and a great deal of space is not required for building. It is true that testing the planes presents a problem, but we have managed by using the corridor, gym, and park. Finally, the children's initial interest in flight is very high. Kids have always thrown paper airplanes around classrooms; I am simply legitimizing an ancient pastime.

I launched the project with a half dozen 19¢ balsa wood gliders and the "launcher," a three-foot-long wood track with elastic attached to one end. The planes were placed in the track and hooked on to the elastic. Our runway was the corridor outside our room.

I also prepared an 11" x 14" spiral sketch pad--the "Flight Book"--to contain the written work done for the project. (I had first used this recordkeeping and display method the year before with another project, The Pond.)* Such a book not only provides a reference for information about past work, it also sparks ideas for new activities. Most of the art work connected with the project is displayed separately. Completed planes are kept on strings in the room, and a history time line, on the wall. Finally, a plane register is maintained in a looseleaf notebook, with a sheet for each plane, telling when it was built, what repairs were made, and so forth.

In our beginning talks, I explained what keeps a plane in the air to a volunteer group of about 15 children, for whom I provided follow-up reading. At the same time I began reading JONATHAN LIVINGSTON SEAGULL to the whole class. I observed that though all looked forward to each day's reading, some children were interested mainly in the story; others, in the accurate descriptions of flight.

The balsa wood gliders I had brought in sparked considerable math, science and graphics work on many skills levels, depending on the child involved.

*See *Science in the Open Classroom*, Workshop Center for Open Education, 1974.

For example, when planes were weighed, for some the result was recorded as "heavier than one marker and lighter than two"; for others, in grams or fractional parts of an ounce.

About a half dozen measures can be used to describe a plane. In all cases, these measures are applied to real aircraft, and I was able to provide the children with examples of "specifications" from magazine articles, advertisements, and books. The simpler measures, in addition to weight, are length, height, and wing span. All children could figure these (though, in a few cases, not in standard units). On the more complex side, for example, wing loading, which is the weight supported by a given unit of wing area, the measure on full-size aircraft is expressed as pounds per square foot, or kilograms per square meter. On our models, grams per square inch worked out well (a convenient mix of metric and English measure). The math skills in figuring wingloading include: measuring the area of an often irregular shape, weighting the plane, and performing long division to three decimal places. Most children could not do this, and many couldn't even conceptualize what wingloading was all about. Still in all, many levels of math skills could be reached using the same material.

Planes are, of course, meant to be flown. Our flight tests were recorded in mathematical terms. From the basics of distance and time we figured speed, rate of sink (how fast a plane loses altitude), and other factors. Knowing the performance of a plane allowed the children to make predictions of how it would behave in various situations. In many cases these predictions were tested by methods that called forth skills in designing and carrying out an experiment. For example, one girl estimated that there should be less air resistance, or drag as it is called, if a model were to be thoroughly sandpapered. She took one model straight from the package and another she had sanded and flew them under the same conditions. The result was a greater distance for the sanded model. Another child predicted how far a particular glider would go if launched off the Empire State Building; unfortunately, this couldn't be tested.

Much of our construction work involved modifying manufactured kits. An elevator might be added, the wingspan increased, or the fuselage lengthened. Sometimes I suggested changes, but usually the children came up with enough of their own. When I questioned why a certain change was being made, the answer often was: "to see what will happen." I accepted this, but I tried to extend the learning by asking for predictions and reasons.

Diagramming planes received much attention. The standard way of diagramming full-size aircraft (and other objects as well) is a "three view" diagram: front, top, and side views. I was able to show the children many examples of these three views in books and magazines. Their own diagrams followed the same format and reflected varying levels of complexity. Some planes were diagrammed full size, often by tracing around the plane; others were drawn to scale, such as 4:1 or 8:1, and elaborately color-coded to distinguish various parts.

During the early stages of the Flight Project the heaviest emphasis was on construction, computation, and diagramming partly because of my strengths, partly because of the nature of the ma-

terial. As the project developed, however, other areas received more attention. For example, at the beginning of the second year of the project, I displayed a time line of major events in the history of aviation. We read about and discussed the lives and work of key individuals: We examined Da Vinci's flight inventions and built a working model of a parachute he had designed. Several girls became engrossed in the life story of Amelia Earhart and wrote and presented a play about her, and of course, the Wright Brothers received the attention they deserve. Reaching even further back into history, a group of children visited the model of the newly-discovered Pterosaur at the Musuem of Natural History.

There was also a fair amount of fiction writing inspired by flight, much of it poetry. Often, the writing was accompanied by illustrations. Art was contributed by children who provided the drawings that formed the covers of the Flight Books, and who worked on a tapestry that included a modern glider, a blimp, and Mercury (along with the FAA flight plan filed from Mount Olympus).

A prime example of thoroughly integrated curriculum was supplied by two girls who were interested in the Wright Brothers. First, they read about them and wrote their own biographical article for the Flight Book. Then they copied three-view diagrams from a book, they built an exact scale model of Flyer I, drew their own three-view of the model, and figured the various specifications, such as wing span, wing loading, and so forth. It was rather disappointing that their model didn't fly, cutting off a whole area of testing and experimenting. Finally, the girls wrote about the entire process in the form of an epic poem and began to set it to music. The whole project took about four months.

Over the two years of the Flight Project with my continuing fourth, fifth, and sixth grade open classroom, activities became more complex and difficult, and the project itself, more varied. At the same time, each child progressed at his/her own pace within the project. I noticed particularly how new children entering during the second year made much faster progress than those who had started at the beginning of the preceding year. The new children were of course exposed to the richness accumulated the year before. They caught on by reading the Flight Books, watching work already underway, and listening to discussions among classmates--a clear example of how much children learn from each other. It underlines, too, that work can be *self-generating!* Enough children had enough ideas sparked by their own work or that of classmates to keep the project going with no new starters from me, though from time to time I did suggest ideas I was interested in seeing tried.

There are a number of special values to undertaking a project like this in a continuing class: The teaching of class routines in September is simplified (the older children remember and instruct the new ones); there is no need to wind down in June; work begun late in the year may be completed by the next; the teacher's attention can be directed toward strengthening a project by including more related areas. For example, history became a greater focus during the second year without sacrificing the already solid math and science activities. Furthermore, new projects can be started once one is firmly established, and after a few years the classroom becomes a very rich learning environment with several themes going. Of course, flight is fairly intense;

its activities dominate the class and are time consuming, so that other projects tend to be more limited.

If, for budget reasons, the continuing class is ruled out, then the need to develop comprehensive projects with long-term stability and continuity can be achieved by family grouped (or vertically grouped) classes. Children enter and leave but the "class" remains, acquiring a feeling of community, a sense of its own history and future. In such a setting children tend to plan their next year in school rather than approach it with anxiety.

Last year a new class book was started called "The History of Class 301." Major events are written about as they happen, but mostly it is taken from memory. In a way, it is the most significant class project we had. For a class to have a sense of its own history spanning years is something special and it is in such a setting, too, that a Flight Project can continue to be the success it has been.

SOME PRACTICAL SUGGESTIONS

MATERIALS

Simple packaged gliders are available wherever toys are sold; more complicated models are available at hobby shops such as: *Polk's*, Fifth Avenue at 31st Street; *Americas Hobby Shop*, 22nd Street between 6th and 7th avenues; *Brownies Pro Sport and Hobby Shop* (a Board of Education vendor) 122 Bennet, Staten Island. These stores also sell balsa wood, needed for original design planes. The smaller packaged planes cost from 29¢ to 69¢ (prices are way up recently). Kits cost from one to three dollars for the kind I find usable. Also needed: glue (Elmer's type and/or duco), straight pins, razor knives, and boards for building. Other tools such as files, pliers and planes are helpful but not essential.

Reference books may be a problem; there is not much material on flight that is directly related to what we are doing. There was even less reading material available on gliders. It may be necessary to order new and current literature.

SPACE

I set aside two work spaces in the room for planes. One is the workbench, which is an old teacher's desk that can accommodate the building of two small planes or a single plane. Another table, four feet square, can accommodate three or four small planes or two large ones. Occasionally, I allowed plane building to extend to other parts of the room but in general, it was restricted to these two tables located near each other. This space limitation also serves to limit the amount of time spent on building. Children sign up for building space and may have to wait several days. This makes it easier for me to make sure that other work is getting done, often more routine and less attractive.

Planes that are in frequent use are kept on four strings run across the room from the upper moldings. Each string has one end tied to a screw eye and the other end running through an eye and tied at a reachable level. The strings may be lowered to get a plane and raised to be out of the way. Older unused planes are stored in a separate room that we fortunately have access to. This room also contains kits and wood. (Without this extra room old planes would have to be sent to children's homes.) Storage of materials and kits could be managed in the classroom.

Space for testing has varied with the type of plane. Small models that fly straight can be tested in the hall. At times there is traffic out there and often children from other classes are attracted to our runway. Planes have been stepped on and broken. I encourage children to make sure the way is clear before launching and to be very careful. Larger planes are tested once a week during our gym period and any day in the yard at recess. We also on occasion use Riverside Park.

WORK MANAGEMENT

At the outset, I never assign children to build planes or, for that matter, to begin other flight activities; many ideas come from the children. For example, a group of children will come to me with an idea for a plane they want to build; we discuss it and I may make suggestions and they begin. I also throw out ideas at class meetings or to individuals or small groups. There are children who spent months in the class without being involved in the project at all. They work on the other activities available in the class. Sooner or later, however, everyone gets involved.

This may sound as if there is no pressure, no admonitions to "sit down, please, and get your work done." But the truth is there is pressure. Once a project is started, I generally expect it to be completed. Children sometimes get off to a good start and then lose interest. I do allow projects to be dropped, but I demand a good reason. A frequent problem with some children is unwillingness to do the write-up that follows building or testing a plane. Here, I make my expectation clear. I'll provide any help needed, but a simple refusal is unacceptable. What's more, I insist that the child cannot work on a new plane until the write-up of the previous one is done. With many children, such pressure became less and less necessary, partly because they were so pleased when the write-up was completed and included in the Flight Book.

THE FLIGHT BOOKS

Collecting written work in sketch books is not only a source of pride to the authors but a source, as well, of the most popular reading material in the class. To keep them intact, I glue on the cover and inside cover design and put clear contact over both. To repair these books I remove the spiral, put filament tape over the edge, punch pin holes in the tape and wind the spiral back in. For *Flight Book 4*, I put copper tape (used for stained glass) over the holes right away; this will probably hold up better. I make sure to reserve the first few pages for a table of contents on lined paper glued to the first three or four pages.

As work is completed, I enter it in the contents and glue it into the book. This is all fairly time consuming (I sometimes spend three or four hours a week gluing children's work into the various class books) but then it enables one to establish a coherence to the work that in the long run speeds up not only the Book but the Project as well.

Michael Tempel, who teaches at P.S. 75, Manhattan, has over the last seven years produced 4 Flight Books, 2 Pond Books, a Story and Poem Book, a Screen Book (movie and T.V. reviews) and a Book Book (book reviews).

Documenting the Process

Catherine M. Molony

The following excerpt is from PHENOMENOLOGICAL DESCRIPTIVE INQUIRY AS A METHOD OF DOCUMENTING OPEN CORRIDOR, a study based in part on observations of Open Corridor teachers. In this section the work reported is that of Bryna Linett, a teacher at P.S. 84, Manhattan.

Even though many teachers are quite successful in guiding an evolving curriculum with children, few are at the point of documenting this process. The curriculum flow chart reproduced here was developed by the author to represent graphically how one Open Corridor teacher developed a curriculum with a group of third and fourth grade children.

Such a curriculum chart demonstrates not only that it is possible to actualize the Open Corridor position on learning but also that it is practical to document a flexible curriculum. Three of the significant features of curriculum as seen by open educators are singled out here: *integration of subjects, interaction between children's experience and interests and the curriculum, and social development through curriculum.*

Integration of Subjects. The chart itself clearly shows that all subjects--language development, math, social studies, and so forth--are brought together in an integrated way. There is no single section labeled "Social Studies" or "Language Arts." These disciplines, like most others are woven through the child's *experience* of curriculum in this class. The study of African culture, for example, was the main outcome of a class trip to the Museum of Natural History. The children's awakened interest led them to a discussion on Africa and from there, to a desire to prepare an entertainment for the school. The corridor teacher then assumed the role of director and taught African dances. Both in class discussion and in preparation for the performance, questions arose which required research. For information on jewelry and mask-making, the class borrowed books from the library. As shown on the chart, African art, cooking, and music were experienced by the children, not as isolated subjects, but as knowledge of a people whom they were just beginning to understand.

Another result of the trip to the museum was an investigation of the meaning of directional signs. Meanings of "North," "South," and so forth are not secured by memorizing definitions but through exploring and using instruments. These activities developed into mapping with its extended ramifications, as shown on the chart. Working

with a compass quite naturally led to magnetism. In general, following any line on the flow chart almost inevitably leads to experiences in many areas--what would in traditional curriculum-making be designated as specific subject matter.

Interaction Between Children's Experience and Interests and the Curriculum. The importance of experience and interest in a child's learning is one strand that is emphasized in open education. Curriculum is geared to the children's interests; it is experienced, not merely "taught." A small section of the curriculum chart provides an appropriate illustration:

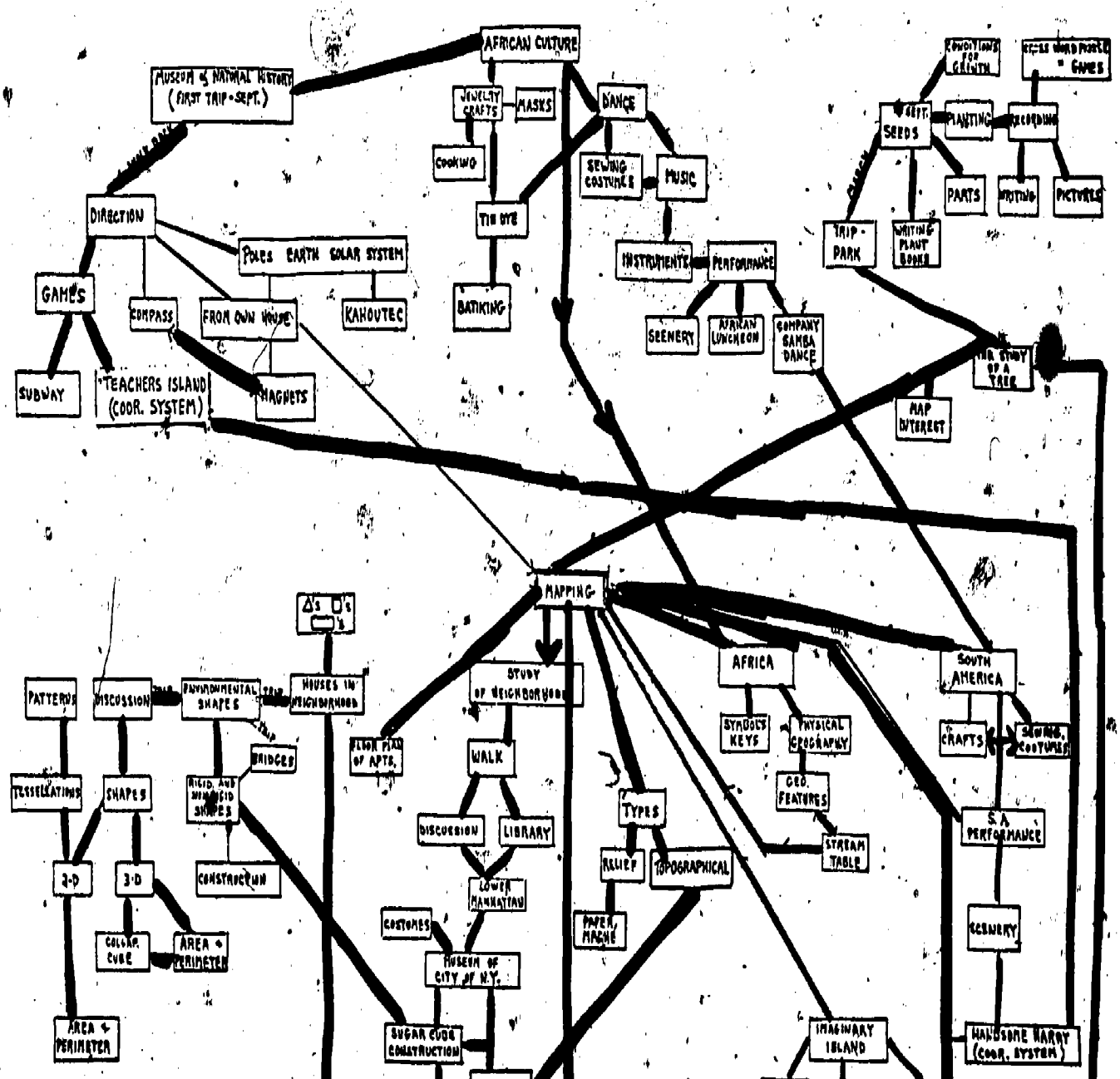
After many different experiences with mapping, some children wanted to make an imaginary island. Several groups of children formed naturally. Some made two-dimensional maps; others, three-dimensional ones, using papier mache, sand, and so forth. With the skillful guidance of their teacher, they moved on from this point of interest into explorations into the formation of original language, government, and stories. As indicated on the chart, language development through writing, discussing, and consolidation of skills progressed through the child's own desire to create his island according to his conception of what an island might be--with the only restriction that imposed by geography, especially after the class walk across the Brooklyn Bridge. Freedom to express their own fantasies brought real enjoyment and learning. Math, in turn, was experienced through scale drawing and constructing, while handling plants yielded a great deal of scientific investigation.

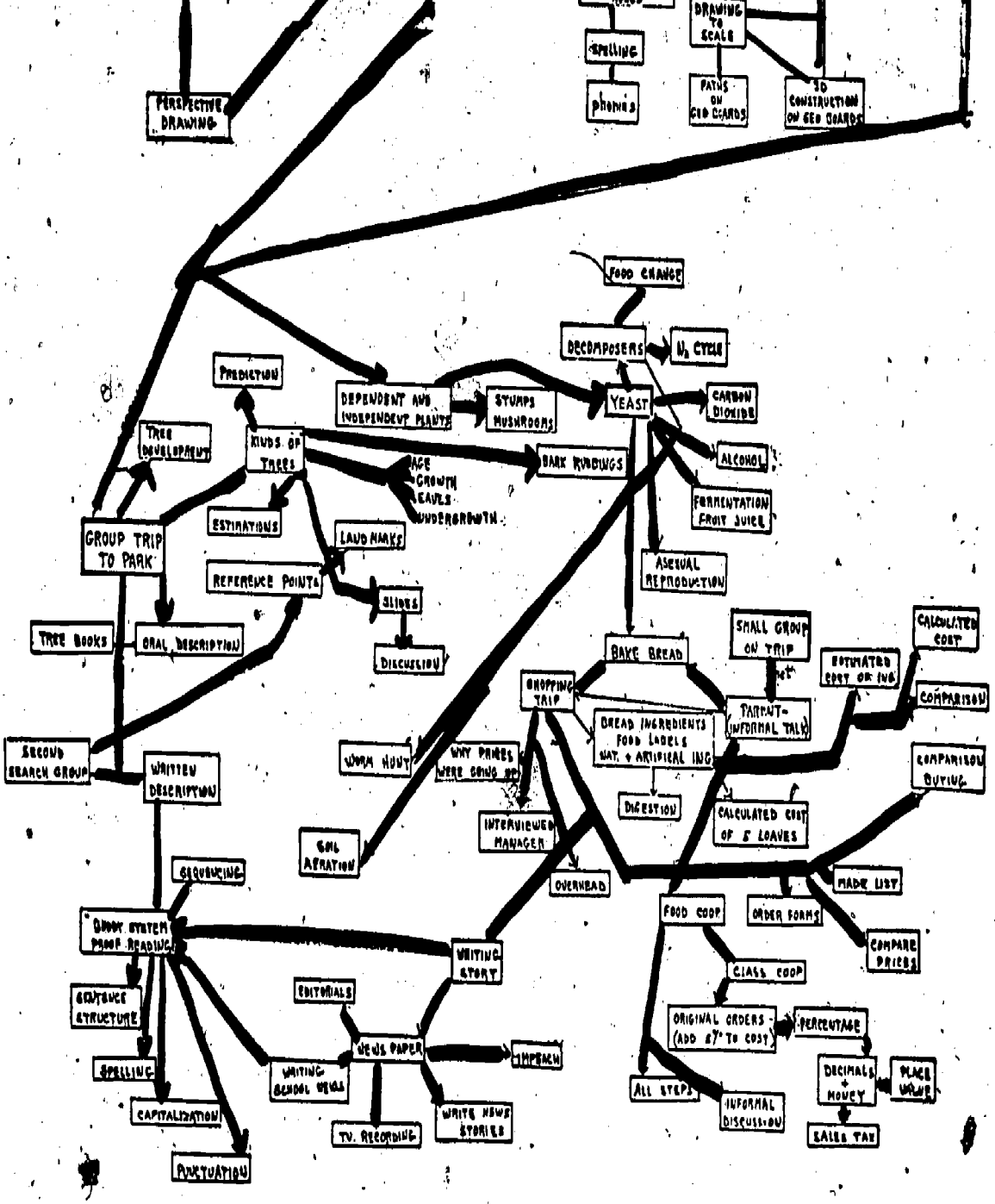
Social Development Through Curriculum. A child's social development is supported in a classroom when opportunities for adult and peer interaction are provided through the total curriculum. Almost every section of the curriculum chart indicates social interaction. Here are a few instances:

The year's curriculum was initiated by a walk through the neighborhood. Thus, the opportunity was afforded for natural grouping of children; for informal chats with the teacher, paraprofessional, and student teacher; and for common points of entry into class discussions. As indicated on the chart, small group projects resulted from this trip. These group formations were not permanent but kept shifting according to individual interests. Provisioning for a variety of interests contributes greatly to growth in interpersonal relationships. Children often join a group because of their interest in the particular activity pursued. A diversity of activity also permits each child to succeed, thereby building mutual respect. Specifically, the class performance, involving the sewing of costumes, the making of scenery, the music, and the dancing united several groups in a common goal. These young children experienced the interdependence among people.

An unanticipated meeting of a parent while on a class trip led to two major strands in this curriculum: (1) bread baking in this parent's home, and (2) a study of food cooperatives, in which the children interviewed store managers, wrote stories, and printed a class newspaper. All these activities naturally involved constant interaction with adults and peers.

Helping one another is essential to this kind of curriculum. The "buddy


AFRICAN CULTURE
MUSEUM of NATURAL HISTORY (FIRST TRIP - SEPT.)
JEWELRY CRAFTS
MASKS
DANCE
COOKING
SEWING COSTUMES
MUSIC
TIE DYE
BATIKING
INSTRUMENTS
PERFORMANCE
SCENERY
AFRICAN LUNCHEON
COMPANY SAMBA DANCE
DIRECTION
GAMES
COMPASS
FROM OWN HOUSE
POLES EARTH SOLAR SYSTEM
KAHOUTEC
SUBWAY
TEACHERS ISLAND (COOR. SYSTEM)
MAGNETS
CONDITIONS FOR GROWTH
SEEDS
PLANTING
RECORDING
PARTS
WRITING
PICTURES
TRIP - PARK
WRITING PLANT BOOKS
MAP INTEREST
MAPPING
Δ's □'s ○'s
PATTERNS
DISCUSSION
ENVIRONMENTAL SHAPES
HOUSES IN NEIGHBORHOOD
BRIDGES
TESSELLATIONS
SHAPES
RIGID AND NON-RIGID SHAPES
2-D
3-D
CONSTRUCTION
COLLAR CUBE
AREA & PERIMETER
AREA & PERIMETER
STUDY OF NEIGHBORHOOD
BIRDS EYE VIEW OF APTS.
WALK
DISCUSSION
LIBRARY
LOWER MANHATTAN
COSTUMES
MUSEUM OF CITY OF N.Y.
SUGAR CUBE CONSTRUCTION
TYPES
RELIEF
TOPOGRAPHICAL
PAPER MACHE
AFRICA
SYMBOLS KEYS
PHYSICAL GEOGRAPHY
GEO. FEATURES
STREAM TABLE
SOUTH AMERICA
CRAFTS
SEWING, COSTUMES
S.A. PERFORMANCE
SCENERY
IMAGINARY ISLAND
HANDSOME HARRY (COOR. SYSTEM)



- Curriculum Flow Chart - Grades 3-4

system" is one way to provide for this. Before submitting his written work for the class newspaper or class book, each child has his work "proofread" by his buddy. Following is an excerpt from the recording of one such exchange:

Child A (to buddy): "Hey, this doesn't make any sense."

Child B: "What do you mean?"

Child A: "Look, you said there was an explosion on your island and everybody in the world was killed off and in the next sentence, you talked about the Sheriff. If everyone was killed off, how did the Sheriff get there?"

Child B: "Everybody but the Sheriff."

Child A: "Well, say it."

This small part of a dialogue alone documents not only the possibility of social interaction in the classroom but peer learning, practice in sequencing events, and language development. The graphic representation as a whole is in itself the documentation of a teacher's implementation of Open Corridor's beliefs about curriculum. More importantly, the chart is reduced in size and mimeographed so that a copy can be filed with the children's individual records. In either form, it provides a record of accountability to be shared with administrators and parents.

Dr. Catherine M. Molony, a former Open Corridor advisor, is now headmistress of the Montessori School of Westchester in Larchmont.

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