How do young adults learn about children? Some come from large families and have siblings and cousins. Some may have served as counselors at summer camp, others as coaches for youth sports. At Stanford, the undergraduate students also have the unusual and wonderful opportunity to learn systematically about children via classes taught here at Bing Nursery School in child development and developmental psychology. Usually in this column I focus on the role of Bing in the education of young children, but this time I want to look at Bing’s role as a laboratory school for Stanford students.

A series of classes is available to students, beginning with Psychology 60A, the laboratory section of “Developmental Psychology.” The developmental course is a centerpiece of the psychology major. Many Stanford alumni, including Bing parents, remember taking this class from one of two very well-known professors, Eleanor Maccoby and John Flavell, both now emeritus. This year we welcomed Susan Johnson as the course instructor. Psychology 146, “Observation of Children,” and Psychology 147, “Development in Early Childhood,” are traditionally taught by the director or a head teacher at Bing School. One of my greatest joys through the years has been to see children through the eyes of Stanford students.

All of these classes involve a weekly seminar/lecture period combined with required observations in the classroom. After learning the normative basics about child development in Psych 60 and 60A, students in 146 complete detailed directed observations recording selected aspects of a child’s development and behavior. This course culminates in a comprehensive child study. The students then move on to Psych 147, where they actually participate with the children. The children view adults in this setting primarily as either parents or teachers, so the 147 students become “my new teacher” or to some of the older children “my new Stanford student.”

What do the undergraduates learn in these classes? Most obviously, they learn theories of human development and how to apply the theories in their classwork. They also learn how to conduct detailed, careful, and meaningful observation, and they become familiar with good practice in early-childhood education. These skills help them after graduation as they pursue careers such as pediatric medicine, teaching, or family and child law. These skills also help them as parents and citizens to advocate good policies and practices for children. Former students often come back and tell us that they most appreciated learning to promote positive human relationships, with both children and adults, and to provide effective intellectual and emotional support based on what we know from psychology.

One recent graduate, Carmel Levitan, wrote a letter about her experiences that eloquently describes how the courses can affect students’ own lives, even when they are not involved with children. “When I first considered taking Psychology 147 while at Stanford, my hesitated. Why take such a course when instead I could be

Molly and Randy Goodman took Psychology 147 while at Stanford. Their children Erika (left) and Nicole (middle) currently attend Bing.
taking something else with more immediate direct relevance to my research and thesis? But the seed of interest that had been planted in Psychology 60A continued to grow, and finally, in my last term, I decided to enroll. I was not willing to let this opportunity slip by. Being at Bing before the students arrived in the morning was quite the challenge after a late night lab session, but a motivating one nonetheless. When I walked through the front gate, it was time to put aside other responsibilities for the morning, and get to work. This sense of entering a new world and structure was quite important to me, probably in much the same way that it is to the children themselves. Knowing that others were depending on my assistance put a whole new spin on my day.

“Going to Bing also brought me back into the real, beyond-college world in ways I truly appreciated. Stanford dorm life is highly artificial; one is surrounded solely by people of the same age. At Bing, I was suddenly involved with students and teachers in a vital way. I saw families and more complex and nuanced interactions than in the dorm room or classroom. This dramatic difference helped reconnect me to my own childhood, and reminded me that while the student lifestyle I was living could be fun, one element had been lacking: family.

“But there was another missing element, perhaps even more important. My days had become fairly routine over the years, and I felt guilty about any time I took for myself. Even when I did make time, I tended to prefer relaxing by reading or sleeping, which, while valuable activities, are ways of putting the rest of the world aside. Really though, I needed more play and exploration. Part of the magic of Bing is that it is OK to try something and one doesn’t need to worry about being “good at it.” A child’s drawing of a mandala is just as valued as a more advanced, representational work. And spending time learning to make applesauce is on par with spending time playing on a computer—neither of which is ever mandatory. I drew so many lessons from this. I reconnected with the pleasure of making things for the sheer joy of making them. Whether the project is a snack, a painting, or a computer program, the process of creation is just as significant as the finished result, if not more. By not focusing so narrowly on the finished product, I gained a new appreciation for the rhythms of my daily life. Instead of trying to hurry up and have dinner ready, I am taking time to have fun with the process of cooking it, and the enjoyment I get contributes deeply to my overall well being.

“Perhaps the most valuable skill I took from my time at Bing is negotiating the trickiness of interacting with others. The children’s problems and conversations often were simply younger, more transparent versions of adult issues and interactions. For example, when the children would have conflicts, there was often a failure of perspective taking.
Not surprisingly, this is frequently a very adult failure as well. After working at Bing, I was a resident assistant in a dormitory. So often, crises and disagreements arose from not seeing the other side or from not communicating about feelings. By helping my residents understand this, I gave them a valuable tool in problem solving. And in helping the children to use these tools, I internalized them so that I myself can use them.

“There are other extremely useful lessons I have drawn from Bing. A major realignment in my thinking came from the guideline of offering positive suggestions instead of making negative statements. So instead of saying, ‘Don’t play that way,’ I had to be retrained so that my instincts were to ask, ‘What about playing this way? You play well this way,’ or to give some other alternative direction of energy. This has proved amazingly useful in working with others; so often, someone will be diligently working away but in a sub-optimal direction. Making negative statements halts everything and dissipates the positive atmosphere. Redirection doesn’t abruptly stop and require a restart; instead it allows a healthier, smoother flow. I have come to look at this as redirection of the flow of a river; it’s much easier to gently change its flow than to stop it altogether and expect it to reappear elsewhere.

“A similar change in attitude came from the encouragement to ask open-ended questions. In the past, I had tended to take a more cut-and-dried approach to situations. I figured I knew what was going on and moved quickly to find solutions or to integrate myself. But at Bing I learned to slow down and take the time to listen to other people’s theories and explanations. So in a meeting, the best approach might not be to take a yes/no vote right away on a proposed decision; instead, it might make sense to adapt a more open-ended approach. Often, simply asking ‘What do you think of this?’ or ‘What do you think the consequences might be?’ can lead to a far better understanding than one would think. This definitely requires giving over some control—one must let the questions and answers guide the process instead of an agenda—but the rewards can be well worth it. Instead of favoring formulaic answers, this approach leads to brainstorming less obvious solutions. So many times, just asking the children ‘How do you think we should do this?’ led to results more relevant and productive than I could have thought of. Similarly, with adults, this has been an important lesson for me.

“Perhaps the most rewarding part of my time at Bing came from my interactions with a boy who didn’t always fit in well. When I first started at Bing, he was having some issues with some of the other children. When angry, he did not always deal with his frustration in the most positive ways, and the other children picked up on this. Not surprisingly, they did not always choose to interact with him, and this of course only worsened his frustration. There was a negative cycle at work. I spent a lot of time trying to help him sort through his issues or simply sitting with him and letting him read to me. Other children would come by, the ones who naturally gravitated to the teachers. This led to some interactions between the boy and his classmates. I served as a sort of scaffold, and he felt more comfortable in my presence. Similarly, his classmates probably felt more comfortable around him when I was around, because I was monitoring the situation and diffusing some of the tension, keeping the overall situation as relaxed and calm as possible. Making the boy part of the social structure was no simple task, and I never fully succeeded. But there was definitely an overall sense of progress that gives me pride and the feeling that I may have made a slight difference.

“There are so many more lessons I drew from my time at Bing. The suggestions imparted in class and by the teachers have stayed with me in the ‘real world.’ Though I do not work with children or plan on having any in the near future, I learned lessons about people that I use and treasure daily. When I do have children of my own, I know I will be a better parent, both because of the experience within the classroom and because of the valuable work in learning how to interpret and understand what I saw. And as a human being, I have become a better person—a bit softer, kinder, and more communicative. Psychology 147 was one of the highlights of my Stanford experience. While other classes merely stretched my mind, this one also enriched my heart. I consider myself so lucky to have had the opportunity to take the course. Thank you.”

We at Bing in turn say “Thank you” to Carmel and to all the other bright, enthusiastic, talented Stanford students who contribute so much to make Bing Nursery School exemplary.

See page 13 for texts used for Psychology 147.
Bing Nursery School was originally founded in 1949 as the Stanford Village Nursery School. In 1966 a grant from the National Science Foundation to the Stanford Psychology Department, along with a matching gift from Peter Bing and his mother, Anna Bing Arnold, made it possible for Bing to move to its present location on the Stanford campus. Dr. Edith M. Dowley, the founding director, worked with architects and landscapers to help create the school’s unique indoor and outdoor environment. In the years since, despite diligent upkeep and caretaking, Bing had begun to look frayed at the edges. Coinciding with Bing’s thirty-fifth anniversary, Helen and Peter Bing embarked on the generous Bing Beautification Project to return the school to its original luster.

The project was kicked off during the summer of 2001. Katsy Swan, the talented garden designer responsible for the gardens at Stanford Hospital, selected and supervised the reforesting of trees and the planting of flowers and flowering vines in every playyard. Then last November a beautifully landscaped brick patio adjoining the kitchen was completed with tables, chairs, a glider, and a tea cart. The space has been well used by staff throughout the spring for lunches, as a reception area for visitors, and as a site for teachers to meet with each other at weekly team meetings, with Stanford students to discuss their journals and classroom participation, and with parents for conferences. In late May teachers and staff held a tea party for Helen Bing in appreciation for her efforts to create a beautiful environment for teachers and children.

Hundreds of Dutch iris and tulip bulbs had been planted in the atrium at the end of the fall quarter, and staff and children alike awaited their colorful show. Finally, during the first warm days of May bulbs and bushes were blooming magnificently in pink and white. What a surprise to discover that a mother hummingbird had built her nest on the lowest branch of the atrium pear tree for all the children to see.

Perhaps you noticed a large delivery truck in the parking lot this spring. It was from Community Playthings in Rifton, New York, the premier maker of wooden children’s furniture and play equipment. Every classroom is being totally refurbished with a complete set of dramatic play and house corner furniture, wooden carts, tables, chairs, bookshelves, and hollow blocks. In addition to these improvements, the Two’s classroom has been updated with new carpet, a marmoleum floor, and fresh paint.

Michelle Olmstead, Bing parent and interior architect, donated her services and, with Helen Bing and Director Jeanne Lepper, planned the update of the Two’s classroom. The remodel continues with the seminar room, dining area, adult bathrooms, and school kitchen. The seminar room will have water colors painted by Pamela Glasscock. Original work from well-known children’s book artist Olivier Dunrea will grace the walls in the dining area. We are truly fortunate to have such generous benefactors, talented designers, and skilled craftsmen. A heartfelt thank you goes out to Helen and Peter Bing and to everyone who has helped make this project a wonderful success.
Brand new carts, chairs, tables, blocks, and dramatic-play furniture—generous gifts of Helen and Peter Bing—are immediately put to use.

Above: Grace and Christina using the new trucks. Far left: Aidan, Benjamin, and Kieran cooking in the dramatic-play area using the new furniture. Left: New carts; Sean and James enjoying the new hollow blocks to re-create “the Great Wall of China.”

Right: Children building an airplane and using the newly arrived chairs as seats. Below: Alexis and Vibha pushing babies in the new carts.
The ongoing Bing Beautification Project involves renovating the entire school for the first time in thirty-seven years, including classrooms, playyards, and adult space. Stanford facilities craftsmen work on updating the school.

Right: Kathleen Baldwin, Zone C manager, and Jeanne Lepper discussing the progress of the renovation. Below: Steve Kaupas, grounds supervisor, trimming new plants, and Floyd Petersen, carpentry shop, installing a new kitchen window.

Left: Bing parent and interior architect Michelle Olmstead consulting on the decoration of adult space. Above: Daniel Johnson, electrical shop, installing new lighting in the kitchen. Bottom left: David Villareal, paint shop, applying the second coat of paint to the seminar room. Bottom right: New lighting and couch in the seminar room, frequently used for staff meetings and parent conferences.
Robert Zajonc: 
*Family Dynamics and Intellectual Development*

By Christine VanDeVelde Luskin, writer and former Bing parent

Is there a connection between birth order and intelligence? This was the question examined by Professor Robert Zajonc, one of the world’s foremost social psychologists, in the 2002 Bing Distinguished Lecture held on May 29th at Bing Nursery School at Stanford University.

Dr. Zajonc began with a look at the 1980 national SAT scores, which had been the highest in many years. The verbal scores reached 506, the quantitative scores 514— a 20-year high. In the United Kingdom that year, a record number of students passed a comparable examination called the A-levels. Each country reacted in its distinctive way, Professor Zajonc notes. “The United Kingdom was shocked that standards were eroding, that teaching was diluted, that there was grade inflation, that there was cheating,” says Zajonc. “In contrast, the Americans were self-congratulatory. Experts were declaring that more rigorous courses had started to pay off, that the infusion of money into the school system was a good investment, and President Reagan took full credit for the rising SATs at that time in his State Of The Union address.”

But rising SAT scores were not always the case. There was a period when the SAT national averages were dropping, as Zajonc says, “very, very badly and for a long time.” From 1967 to 1980, in verbal SAT mean scores, there was a precipitous drop over 13 years. This data, too, had been greeted with strong reactions and various explanations. Families were blamed for not spending enough quality time with their children. TV was rotting students’ brains. Communities were not giving enough support to schools. There was crime, drugs, smoking, drinking, rap music, the erosion of standards of excellence. All these things, it was said, contributed to dropping SAT scores.

However, in 1976, Dr. Zajonc published a paper meant to reassure. It said “Don’t worry. This drop is temporary and this trend will not continue. Wait until 1980 and things will change.” And that’s exactly what happened.

“When I made this prediction in 1976,” says Zajonc, “when scores were falling, a friend, an economist, told me that I was very foolish. I was not doing the kind of thing that economists do. They make predictions, but they make predictions about the time of change or the direction of change. It is foolhardy to make a prediction about both, he said. And I made a prediction that in 1980, there will be a reversal of SAT scores.”

How did Zajonc get it so right? First of all, he notes, there was no evidence that any of the causes people were attributing to declining SAT scores—parental neglect, TV, lack of financial support—had any relationship to the declining scores.

What Zajonc focused on instead was a strong parallel between the falling test scores and family trends. “In particular,” he says, “it appeared that the falling test scores tracked quite accurately the average orders of birth of children born into this population of children then taking the SATs.”

What exactly is average birth order?

When you are born into a family, you may be a firstborn, a second born, a third born, and so on—that’s your birth order. To get the average birth order for any group of people, you take the number of first births multiplied by one, the number of second births multiplied by two, the number of third births multiplied by three and so on. Sum these products and divide by the total number of births and you’ll get the average order of birth for that group.

Zajonc recognized a simultaneous decline in average birth orders and SAT scores. Between 1949 and 1962, families were having more and more children, so the average birth order declined. Eighteen years later, these children were taking their SATS and scores were showing a simultaneous decline. Beginning in 1962, families began to decrease in size, so the average birth order rose. Eighteen years later, Zajonc forecasted, SAT scores would start to rise.

Because SATs are taken by only a fraction of the total population, but the Census data report all births, there is some discrepancy, what social scientists call “noise” in the data. However, another source of excellent data supports the same conclusions.

In Iowa, every single child is tested every single year. Since the data in Iowa are based on the total population, there should be closer correspondence between average birth order and scores. And, when examined, the correspondence was very close. In Iowa, as in the nation, the lowest average birth order level was for children born in 1962-63, and it was also the year where the scores on the Iowa basic skills test were the lowest. From then on, things changed.

Now, remember that in the United Kingdom, there had been a rise in scores of the A-levels in 1980, corresponding to the US rise in SAT scores. So, the question was, “Do A-levels in the United Kingdom correspond to the average birth order in the United Kingdom?” Again, the correspondence was very high. And interestingly, the point of change was 1962—the same as in the United States.

“Now,” noted Zajonc, “everything I have told you up until now begs the question: Why should SATs be in any way related to such factors as family size and birth...
order? Of course, there are some theories about birth order. There are theories that postulate depleting resources within the family; theories about the physiological exhaustion of the mother; theories of ‘uterine fatigue’ as a factor; theories about the association between socioeconomic status and birth order and intelligence. But not all these theories are on solid ground.”

Zajonc’s prediction that test scores would begin to rise, made in 1976, was based on a theory about the emergence of individual differences in intellectual performance within the social context of the family. In 1973, a study was published that examined the relationship between birth order, family size, and intelligence. The data from that study was drawn on nearly 400,000 recruits in the Dutch armed forces. And it very clearly showed that intellectual test scores systematically declined with family size. Within each family, each successive child in the birth order scored a little lower in intelligence.

But this data also contained some anomalies. The last-born child in a family showed a precipitous drop in intelligence. And there was a discontinuity in a family with only one child. If family size, after all, is a systematic factor in intellectual scores, you would expect the only child to score the highest, but he does not.

Those two anomalous factors are related.

Two factors enter into creating and changing the dynamics of the intellectual environment. One of these factors is birth order. However, there is another, very important mitigating factor—the “teaching function.” And this applies to all children except the last-born or the only child.

In each family, the older children serve as mentors, teachers, and caretakers of the younger children. That function is important and, in fact, benefits the teacher more than the learner. But the opportunity to teach is reserved only for children who have younger siblings. The only child is a last-born. Any last-born never has anybody to teach. As a consequence, lastborns and only children score lower in intelligence.

“The differences that I have shown you are small differences,” cautioned Zajonc. Such aggregate data of mass proportions cannot be applied to any one individual or any individual family. Birth order and family size effects are risk factors, not determining tendencies that have practical solutions. But, we should know about them. Because, for a nation or for a community, the effects can be significant.

“Let me give you an illustration of what I mean,” continued Zajonc. “Let’s take a community of 1,000 individuals. If this community has an average IQ of 100, and a standard deviation of 15, this community will have 22 individuals who score 130—in the gifted range—and they will also have 22 individuals who score below 70—and these individuals will have to be taken care of by the community. Now let’s take a community whose mean IQ is 85, one standard deviation lower, and this community will have only one individual who is gifted and 159 individuals who may be a burden on the community. That is an enormous difference, which accumulates simply by virtue of very small differences, and has significant and important effects on the community.”

Zajonc admits that IQ is not everything—other effects accrue from different dynamics of the environment in the family. Other studies have found later-born children are more creative than earlier born children. And, although earlier born children are more intelligent, there are questions of leadership, personality differences, effectiveness, and well-being, which also are effects of family size. Socioeconomic status has some effect, as well. For each $10,000 of income, Zajonc said, SAT scores rise 16 points, a significant change. Interestingly, no study on birth order has found any gender differences.

While Zajonc hesitated to offer any policy suggestions based on his data, he believes the effect that accrues from acting as a teacher should be seriously considered. “We’ve not recognized sufficiently how much a child can benefit from being a teacher of someone else,” he says. “It would be possible, for example, to run classes in which half of the students learn about decimals and the other half learn about common denominators. Then, they would teach each other about what they know and perhaps they would both gain a little bit more.”

Dr. Robert Zajonc joined the Stanford faculty six years ago from the University of Michigan, where he received his Ph.D. and was the Charles Horton Cooley Distinguished Professor of the Social Sciences and the Director of the Institute of Social Research. He is a world expert on the psychology of emotions and affect and on the development of preferences and has studied topics as diverse as social behavior in animals and the causes of collective violence in people. He is also a member of the American Academy of Arts and Sciences.
Eve Clark is professor of linguistics and symbolic systems at Stanford University. She has been conducting research at Bing Nursery School since the 1970s. Hundreds of children enrolled in the school have participated in her studies. Clark has published several books including *Psychology and Language: An Introduction to Psycholinguistics* (with H. H. Clark), *The Ontogenesis of Meaning: Acquisition of Romance with Special Reference to French*, *The Lexicon in Acquisition*, and *First Language Acquisition*, due to appear this autumn.

**What are your main research interests?**
I’m interested in how children learn their first language. Much of my work has been done with children between about 18 months and 7 years old. Since I have been at Stanford, I have done nearly all my experimental work at Bing Nursery School.

My major concern throughout has been how children learn meanings. Meanings can be meanings of words, meanings of word endings, and meanings of constructions, and I have focused at various times on all of those. How can we look at this? How can we look at it experimentally, we can look at it in naturalistic settings, we can look at how meanings are acquired in conversations. My focus right now is on adult contributions to meaning acquisition and the kinds of inferences young children can make.

**Tell us more about your current research.**
What we are trying to do now is look at the kinds of information from parental speech, from adult speech, that could be helpful in making inferences about the meaning of an unfamiliar word.

One of the things we’ve been studying in several experiments is some of the different ways to introduce words for things, words for parts, words for functions, and words for properties, to see which kinds of introduction children seem to show best learning for at particular ages. We are writing up some of this research now.

**Could you say a bit more about your studies of children with their parents?**
A major source of information for children about word meanings and the meanings of constructions is what their parents say to them. Because language is always interactive, we’re interested not only in what inferences children make but under what circumstances they make them when they hear their parents giving them particular pieces of information.

What we are doing are very detailed analyses of what children could infer, given what the adult just said. Do we see any evidence that they have made that inference? To find out, we have to do an analysis of each turn in the going conversation.

**Could you give an example of this kind of parent-child interaction?**
Well, take a one-and-a-half-year-old and a parent looking at a picture of an owl in a book. There’s a picture of owls. The child points and says “duck.” The parent then says something like, “Yes, those are birds. They’re called owls. Owls, that’s their name.” And only then does the child say “bird.” Now you can infer that the child has figured out that this probably isn’t a duck, but the parent is being approving and saying it’s a bird. So maybe whatever this thing is, ducks belong in the same domain, and the term for it seems to be “bird” but you’re not quite sure. Maybe “bird” and “duck” are at the same level of contrast. So you could say that the child infers that “bird” is an okay term. But the meaning of “owl” remains a question: how does an owl differ from ducks or birds? But the next thing the parent does is to go on to say, “And you know what the owl says? The owl goes hoo hoo.” At that point the child says “owl.” Notice that the parent has given a distinctive property and immediately the child tries out the new word. So this bird has a different sound to the sound that goes with ducks. That’s part of the contrast. And the parent is very approving and says, “Yes, owls go hoo.” And the last turn in the exchange is the child saying “hoo.”

So, what we do is look at the successive inferences the child could make. Now, we can’t say for sure the child has done this, but this would make sense of how the child acts, and which words the child is chooses to try out at each point in that exchange. What we find is that in many cases where the child is offered a new word, the subsequent exchange follows that pattern, a parent gives distinguishing information, that seems to encourage children to say the word even if they weren’t willing to say it before.

**What conclusion do you draw from this work?**
What you see is that parents talk a lot about properties and parts to 1- and 2-year-olds, but they don’t talk very much about functions. As children get older, parents talk much more about functions, of how things are used as well as what they look like, what properties they have, what parts they have and so on. So, what we are trying to do is to lay out, if you like, a map of the kinds of information parents offer at various ages, and a map of the range of inferences, given those offers, that children can make.

Early on, children seem to be pretty attentive to parts and properties. By
three, they are equally attentive to other kinds of information. But, of course, all of this is relevant in working out what an expression words means, so whether you are learning words at three or at thirty you can make use of all kinds of information. It is just that you get extremely good at absorbing it all in one bite as you get older. So it becomes much harder to observe this step-by-step process typical of very young children.

In the early nineties, you published articles on what young children know about constructing new words. We did a lot of crosslinguistic research on what young children know about the internal structure of words and the meanings of the stems and endings they can use themselves. This research included work on the comprehension and production of novel compound words in English. For instance, I might ask a child to find me a picture of an apple-knife, where this is a novel compound in English. And what children see is a picture of an apple, a picture of a knife, and a picture of a spoon. What will they pick out if they hear “apple-knife?” Now, if they go for the heavily stressed word (I am talking about young two-year-olds, in the Two-Year-Old Room), then they might go for “apple.” If they only listen to the last word, they might go for “knife.” On the other hand, if they also know that a knife is the kind of thing being talked about when one says “apple-knife,” they could also do a further study where we showed the same children a picture of, let’s say, an apple with a slice out of it and a knife on the plate versus a knife on its own, an apple on its own, and some other combination of fruit and utensil.

We did a variety of comprehension studies with both complex and simple pictures and we looked at which ones children chose consistently. What we found was that by two to two-and-a-half, they consistently pick out the second noun in novel compounds, which is the right one if there is only one thing pictured because that’s the kind of thing you are talking about, but they also know that the first noun in a compound is the modifier. And so, with complex pictures, they pick the appropriate combinations too. In their own speech, they produce compounds with the right stress pattern and with the head nouns in second position with no problems from age two on.

You did a very interesting study, early on, on children’s understanding of kinship terms. What were your findings? In 1974, we looked at what children knew about kin terms. You take for granted they know “mother” and “father” but do they know that these are actually relational terms? And what about “brother,” “cousin,” “uncle,” and “aunt”? We asked children between about three-and-a-half and eight “What is a ‘brother’?” “What is a ‘sister’?” “What is an ‘aunt’?” “What is an ‘uncle’?” We had a long list of kinship terms, for which we collected definitions, and then we analyzed those definitions.

We found that the relative complexity of the meaning of each term correlated with the order in which children learned them. But we also did one other thing—we sent a questionnaire back to every family in the study and asked several questions about which relatives each child actually had, for instance: “Does your child have an [aunt], and how often does she see this relative?” “Is this someone who lives in Palo Alto, so you see them frequently?” “Is it someone who lives elsewhere in the country, so you maybe see them once or twice a year?” “Is it someone who doesn’t even live in this country, so maybe they’ve heard about that person but never met them?” So we could also look at how familiar they were with each relative. It turns out that the major factor was the complexity of the term and the next was children’s familiarity with each relative.

A couple of years later, a post-doc of mine did an excellent follow-up study in Germany, where he looked at children in orphanages to see how well they knew kinship terms at particular ages. In general, they were delayed compared to children who lived in families but the ordering by complexity still held up.

References
David Kelley on Innovation
By Jeremy Smart, Teacher

David Kelley, a professor in Stanford’s product design program and founder and CEO of IDEO Product Development, spoke at a Bing staff-development day about keeping an innovative, open mind. He certainly spoke from experience: IDEO has designed thousands of products, ranging from toothpaste tubes to laptop computers.

Kelley emphasized that creativity and innovation are most likely to arise when one can unlock restraints and “get out of your comfort zone” in order to think outside the box. He pointed out several activities that help people invent and develop ideas, including beginning with brainstorming, gaining confidence in drawing (both to aid creation to present ideas to others), critiquing and displaying work, and even “bringing in people that don’t fit,” for their perspectives can spark change in seemingly set ideas and routines.

Kelley stressed that being innovative and creative will apply “to anything in life, not just being an artist.” Perhaps even more than adults, children are natural experts in creativity. A wooden block becomes a boat; sand and water transform into part of a fantastic meal; paper and string turn into a rocketship to the moon. By helping children develop such ideas, offering an opportunity to see things in new ways and from different perspectives, we parents and educators can provide an excellent venue for self-discovery and learning.

The Making of Alphabing
By Courtni Holst, Teacher

Alphabing started as West PM’s class gift for the annual Harvest Moon Auction last November. The idea of an alphabet book all about Bing was mentioned to Jennifer Justice, a parent of a child in the class and a writer. Jennifer took the idea and ran with it, composing most of the clever alphabet rhymes in just a few days. She used the sequence of the day at Bing as her format, starting with arrival and ending with storytime and all the many things a child looks forward to doing the next day at school.

Anne Baldwin, another parent in West PM and a professional photographer, offered to donate a few afternoons a week to photograph the situations described by the words. Many parents of West PM donated money needed for developing the film and for printing and binding the book. The production of the book would not have been possible without a generous donation from Helen Bing, who also made it possible for every child attending Bing to have his or her own copy.

With the book available for all to read and enjoy, Anne and Jennifer discussed the creative processes involved in Alphabing at staff development day this past spring. Jennifer said she took her cue from Bing’s philosophy of developing many of the classroom ideas from the activities and perspectives of the children. She wanted the language not only to reflect the child’s view of the day but also not to talk down to the children in any way—using language adults would enjoy and trusting children to understand an adjective like “exhilarating,” for example. Jennifer also gave the staff a sneak preview of a children’s book she’s working on.

Anne, too, spoke of the importance of the child’s perspective, of wanting each child to be able to put himself or herself in the story the pictures were telling. She sought to capture the “peak moment,” which isn’t always done by taking just one shot of the situation. She also took care with positioning herself correctly, for example, taking a few extra steps back to make sure a whole tree appears in the background so that it does not seem to be coming from just anywhere. Not only the subject is important, Anne noted, but also the background and indeed the whole picture. Responding to a prior request, Anne critiqued classroom photographs taken by several teachers and offered many tips on composition, angle, and cropping.

Alphabing is a wonderful gift to all children attending Bing, and its creators gave the staff a rich opportunity for professional development.
At our staff-development day during spring quarter, Masaharu Kage spoke to us about “lesson study,” a technique for teacher training in Japanese elementary schools. Kage is an associate professor of psychology at Keio University and is currently a visiting associate professor at Stanford.

The unique characteristic of lesson study is collaboration with colleagues in order to reflect on a lesson and to gain perspective for future lessons. The entire purpose of lesson study is to help teachers develop “eyes” to see students and their relationships within an educational environment. This careful observation of students and their work enables teachers to formulate goals for student learning and long-term development.

Kage provided material from the work of an American colleague, Catherine Lewis, who is currently at Mills College in the school of education. Lewis’s Lesson Study: A Handbook for Teacher-Led Improvement of Instruction includes the following excerpt from *The Teaching Gap* by James Stigler and James Hiebert:

> Improving something as complex and culturally embedded as teaching requires the efforts of all the players, including students, parents and politicians. But teachers must be the primary driving force behind change. They are best positioned to understand the problems that students face and to generate possible solutions.

Kage’s interesting and informative lecture supported and strengthened some of our own practices here at Bing. Even though our children are much younger than those discussed by Kage, the same techniques of colleague collaboration are applicable.

At Bing, for instance, we engage the children in “project work” and in so doing we listen to and observe what the children know about a particular topic. It is important to note that our project work provides the structure for but is not a prescription for learning experiences. We see project work as a way to support and engage the children in meaningful learning experiences. Teachers construct curriculum through all areas of the classroom environment, document what and how we are learning, and meet regularly to discuss the project’s progression.

The exchanges among teachers always provide multiple perspectives and observations, similar to the disciplined collaboration in lesson study. Both lesson study and project work share similar goals of collaboration among teachers and developing in children a disposition for learning that will last a lifetime.

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**Designing for Play**

By Svetlana Stanislavskaya, Head Teacher

As we know, play is serious work for a child—a time to learn, discover, and create within an environment that is open to manipulation. The half-acre yards at Bing are carefully planned to be just such an environment, and children enjoy the space and freedom. Most playgrounds, in contrast, seem to force children into a strict set of repeated motions. What is the Bing child to do on a weekend or after moving on? Who is concerned with design of public spaces where children can play?

Steve Raney, a Bing parent and an urban-design student at UC Berkeley, suggested that we look for answers to Martin Flores, senior landscape architect, and Peter Geraghty, architect and urban designer, from the San Jose Redevelopment Agency. Between them for the past ten to fifteen years, Flores and Geraghty have been involved in every major project for children in downtown San Jose, including the interactive water fountain at Caesar Chavez Park, St. James Park, the Tech Museum, the Children’s Discovery Museum, Arena Green, and Horace Mann School.

On a visit to Bing, Flores and Geraghty described and showed slides of their projects. The new McEnery Park, for example, features colorful spring toys, a model boat, and climbing structures. But most children (and their parents!) will be playing in the river—not the Guadalupe River itself, but a re-creation of it that forms the central spine of the park. It starts in the mountains with mist and boulders, flows through sandy foothills, and meanders on a broad plain before disappearing into irrigated fields.

Playful dragonfly sculptures hover above the river, suggesting the need for all rivers to be free of pollution. Long arching benches follow the flow of the water. The patterns of diagonal paths invite children to count and read and measure. On the designers’ slides, the park looked like a Bing school yard, but with a city in the background and misty sprays of water to run through on a hot day.
Narration and Math Thought—A Link?

By Suzanne Offensend, Teacher

As part of staff-development day in February, Daniela O’Neill, Ph.D., a former student of John Flavell, spoke about the importance of narrative in children’s development. O’Neill is visiting Stanford on a sabbatical from the University of Waterloo in Ontario, Canada. She specializes in the theory of mind and how it plays a role in peer conversations among 3- and 4-year-olds.

O’Neill began her research by focusing on narrative, or storytelling, because of claims that narrative ability is the most important language skill leading to success in school and thus an excellent predictor of later academic performance. Because narrative is linked to reading ability, this theory made sense, but the evidence backing it was poor.

O’Neill designed a study in which 3- and 4-year-old children were shown a book and then, were asked to retell the story to Big Bird or Ernie. The book Frog Goes to Dinner by Mercer Meyer was used because it involves a lot of people and mayhem. Among the items compared were the length of children’s utterances, the number of events they mentioned, the number of different words they used, and the number of perspective shifts (switches from one character to another).

When these children reached kindergarten and first grade they were given the Peabody Individualized Achievement Test, which measures spelling, reading, math, and general knowledge. To O’Neill’s surprise, high performance on the earlier narrative study correlated most strongly not with general knowledge, spelling, or reading, but with math.

O’Neill, a self-confessed “math-phobic,” is now studying how mathematical and linguistic thinking may be related abilities. This view is supported by mathematicians such as Keith Devlin, the author of The Math Gene, who has pointed out that math is above all pattern recognition, that it is all around us every day, and that 99 percent of math thinking is learning to ignore irrelevant information while choosing what is relevant. O’Neill wants to identify the early component skills fundamental to math thought that appear regardless of the teaching domain—not with the goal of intervention but to learn what is so powerful about narrative and how it connects to problem solving. Indeed, another type of narrative ability that may be importantly linked to problem solving is hypothetical or “what if” thinking.

In other research, O’Neill is interested in how preschool children start to converse with each other. This situation is difficult for preschoolers, who must make the most of their limited knowledge of other children to find a topic of mutual interest to talk about. It is a very different task from talking to adults, but adults can help by following some easy tips tell stories, talk at meals, and ask “what if.” You don’t have to buy anything at all—just talk!

Texts for Psychology 147

Interested parents can purchase the texts used in Psych 147 at the Stanford Bookstore. The main text, Island of Childhood by Eleanor Fitch Griffin, is a classic filled with “jewels” to support children intellectually and emotionally. Griffin’s descriptions of effective communication are useful with older children and adults, too. A selection of books by Vivian Paley, a teacher at the University of Chicago Laboratory School, chronicles challenging issues such as gender-segregated play and exclusiveness.

A Map.

By Alexander H., age 4
Telling stories to children, as opposed to reading stories from a book, has some clear goals and objectives. First, telling a story without pictures actively engages children’s imagination in forming their own mental images—a rare opportunity for most children, who are bombarded with words, visual images, and sound effects. Second, listening to a storyteller promotes children’s ability to understand the emotions conveyed by facial expressions, gestures, and body language. And third, storytelling helps children develop listening skills and learn to follow a story sequence.

Storytelling has practical advantages, too. Since the storyteller can focus completely on the audience without the distraction of a book, each child feels an intimate bond with the teller, a sense of being spoken to directly. Storytelling can also occur anywhere and any time, and for any length of time: the teller can abbreviate a story for distracted, restless children or embellish a story for a rapt audience. Storytelling lends itself well to the use of music and props. Props found in the immediate environment are ideal, for then the children can use the same props to retell the story and thus become storytellers themselves. Finally, the storyteller can even include the children in the plot.

There is no “right” way to be a storyteller and no “right” material to use. Most often, storytellers select stories that they themselves love, such as a treasured tale from childhood. They also mine fairytales, legends, and other folklore. Some storytellers edit out elements that may be inappropriate for the audience; others focus more on the whole. Some storytellers use props extensively; others use none at all.

Professional storytellers have important advice for those starting out: whatever your material, learn it well. Begin with a simple story that does not include many elements, and review it until it is internalized. Practice telling the story to yourself or to a few trusted people before presenting to an audience. Just before greeting an audience, make an effort to be calm and focused: a few deep breaths or a pause can help. If you become rushed or harried, the audience will generally follow suit. When you are focused, calm, and prepared, the audience can become fully engaged. And don’t forget to give the story a strong ending.

The beautiful pear tree in our atrium could truly blossom this past spring when a second, declining tree was removed. A hummingbird nested in one of the pear tree’s low branches and gave us all a close-up glimpse of nature. The children called this their “popcorn tree” and enjoyed singing about it.
“This is my building,” Riley explained to a teacher transcribing his words. “It’s a hundred feet tall!” Riley pointed to his clay creation and elaborated, “It has a huge window. The little pokes are the small windows.” A basic, open-ended material such as clay, water, sand, or blocks relinquishes all power to the minds and hands of children, inviting them to explore and create freely. And as the children talk about their work, their ideas take center stage and become the focus of the learning experience—the context of the conversation. Often their ideas flow through spontaneous conversation like free verse poetry.

In addition to creating clay pieces that sprang from their own experiences and ideas, the children also helped to make characters and objects that were then used by teachers at story-time to help tell a story or sing a song. The week we read Eric Carle’s A House for Hermit Crab, the children were excited about helping to decorate the hermit crab’s shell. “I’ll make the pebbles!” Emma R. exclaimed. Cassie studied the shape of the snails in the book and rolled her clay out on the table like a tiny snake, then coiled it up into the shape of a snail. Another week we sang the song “A Tree in the Wood” and the children helped make a branch, a nest, a bird, a feather, a flea, and even the hair on the flea. After weeks of working freely with the clay, the children responded enthusiastically to the cognitive challenge of making a more representational piece of work, studying a picture or an object carefully and then trying to re-create it with clay.

Besides learning from actually manipulating clay, children also benefit from communicating about their work. “My clay keeps changing. The baby bird will be hungry, she will want a worm,” Joyce explained at the clay table, as an attentive teacher listened, asked questions, and jotted down what Joyce said. By lending a curious ear or by writing down a child’s words, a teacher sends a powerful and important message to the child: what you think, know, and say is important and valued. The process also helps children to connect spoken words and written words, an important step in the development of literacy. Joyce rolled her clay out on the table and continued, “It looks like a stick, but if I put a head on…” She carefully attached a small ball to the worm. “Now I’m done, with the story and my clay.”

At story-time at the end of each day, we presented the children’s clay work, allowing the other children to listen to their peers’ words and see what their peers were working on and thinking about. The children’s pieces were then put on display each day as the children left the classroom. Children were eager to show their caregivers our museum and what they had done to contribute to it. The museum again validated each child’s labors and thoughts, and it also bridged home and school as caregivers shared in the enjoyment of their child’s and other children’s work.

Samples of children’s clay work

Photo not available online.  
Three Bears’ House.  
By Jake G.

Jake G. made a house for three bears with clay. Molly Knight, Psychology 147 student, talked to him about his work. It was on display in the Center Room clay museum later.

Photo not available online.  
Trees.  
By Naomi E.

Photo not available online.  
Little bird looking for his mother in the flower.  
By Sierra B.

Photo not available online.  
Stripes.  
By Jacob P.  
Four layers.  
By Kylie C.
The Importance of Blocks
By Jennifer Winters, Assistant Director

Parents and teachers alike understand that young children learn best by making their own discoveries and acting on their own ideas. But learning something well also requires plenty of time and space and appropriate materials that meet children on their own terms. Because young children are more physical than verbal, blocks provide an excellent open-ended medium for communicating and playing out their ideas and for developing cognitively, socially, emotionally, and physically.

Blocks challenge and develop a child’s cognitive processes, particularly mathematical, scientific, and language skills. Manipulating the specific shapes to build roads, bridges, and enclosures requires estimating, measuring, and gauging spatial relationships (inside, beside, together, on top, over, under). Increasingly more elaborate structures call on the scientific principals of gravity, stability, and balance. Inclined planes engage children in trial and error. Questions such as “What would happen if...?” stretch children’s critical thinking. Telling stories about the buildings, naming them, make up signs, and relating ideas and questions to peers and teachers strengthen children’s language skills.

Much of this development is evident in the activity of Manuel as he constructed a series of ramps across the room:

It started out rather simply with one large rectangular board and two large cylinders. Manuel used those blocks to construct an inclined plane and quickly remarked, “This will make my cars go fast!” The teacher sitting nearby replied, “Yes, they do go fast. I wonder what would happen if you added one more board to the other side.” Manuel jumped up and ran to get another board and two more cylinders. He carefully placed the cylinders next to the existing cylinders and the board next to the existing board. He started to experiment, repeatedly pushing the car up and watching it come down. Then he saw a way to extend the pattern. Measuring and placing each block in a specific order, he added boards and cylinders until they extended the length of the room. After he completed the pattern, Manuel used the structure for a significant amount of time, testing his ideas with excitement and satisfaction.

About Unit Blocks
Unit blocks were invented in the 1913 by Caroline Pratt, founder of the City and Country School in New York City. The blocks are traditionally hardwood. They are multiples or fractions of the basic unit, a brick shaped block, twice as wide as it is thick. Children internalize mathematical concepts as they construct with the blocks. A typical set of blocks for school or home includes a good number of units, double units (longies), some half units, and some special shapes like semi-circles and pillars.

The blocks at Bing are supplied by Community Playthings, Chester, New York. (Address: 359 Gibson Hill Road, Chester, NY 10928-2321; Phone: 800-777-4244; Fax: 800-336-5948.) Parents can call for a catalog. A set of blocks can be shared by siblings and cousins and handed down for generations.

Blocks also contribute in many ways to children’s social and emotional development. The boost in children’s self-confidence as they complete their structures is evident in their smiles and body language. Cooperating, taking initiative, and respecting the work of others also come into play, as when two or more children work together on a common building:

Ariella was constructing with half-circle blocks when her friend Sima-Ana arrived in the block area. Ariella quickly invited her to join in, and Sima-Ana readily accepted. “I’m building swimming pools,” Ariella stated. Sima-Ana observed the scene, smiled at her friend and then began to follow Ariella’s lead in connecting the half-circle blocks. Sima-Ana then picked up some small pieces of fabric and suggested that they place one under each circle or pool. Areilla smiled and nodded, and the girls placed the fabric carefully under each pool. The play continued for the better part of an hour as the two friends built an elaborate system of pools.

Young children learn primarily through movement, so of course blocks also promote physical development. Children must reach and stretch to get and place the blocks. They walk and run alongside ramp structures that may stretch across the room. Manipulating the blocks and creating structures, they sharpen
hand-eye coordination and visual perception. The architect Frank Lloyd Wright wrote about the influence of childhood experiences with Froebel Blocks on him:

_The smooth, shapely maple blocks with which to build, the sense of which never afterwards left the fingers: so form became feeling._

The physical affinity for blocks came through in the play of Seongmin:

Watching Seongmin build an extensive series of intricate vertical structures was like watching a painter or a sculptor create a masterpiece. He had an idea, and through careful balancing and keen hand manipulation he built his first creation. Then he stood and motioned for the teacher, “Look at my rocket ship!” The teacher commented on the large size and how well the rocket ship balanced. Seongmin smiled and then proceeded to build several more rocket ships throughout the block area.

As wonderfully simple as they are, blocks involve the whole child—body, senses, emotions, cognitive processes, and social interaction. A more open-ended, flexible, and constructive medium could scarcely be imagined.

According to Harriet Johnson in _The Art of Block Building_, children work with blocks in distinct stages:

- Children carry blocks from place to place or stack them or mass them in irregular piles. Through manipulation, children are getting acquainted with the particular qualities of the blocks.
- Building begins. Children mostly make rows, either horizontal (on the floor) or vertical (stacking). Repetition is evident—piling blocks beside or atop one another.
- Bridging begins when children set up two blocks with a space between them and then roof that space with another block.
- Children form enclosures by putting four blocks together to form a space. Enclosure requires something of a cognitive jump, so once children learn it they tend to repeat it. Then they create symbolic representations, a “house,” for instance, and a “car” consisting of a single block.
- Decorative patterns emerge as children become more comfortable and skilled with the use of blocks. They continue with representation or give their structures names. They build increasingly complicated structures.
- Naming of the specific structures for dramatic play begins.
- Children’s buildings often reproduce or represent actual buildings they know—for instance, “the Golden Gate Bridge” or “the Hoover Tower.”
As part of an ongoing investigation of the tools in our classroom and at home, the children in West AM used measuring cups, spoons, whisks, rolling pins, graters, egg beaters, and other kitchen tools in a variety of cooking activities. After a few weeks of cooking with and talking about these gadgets, the children were given the opportunity to draw them.

Preschool children can draw from observation, but their drawings are often best understood not as “realistic” renditions of objects in the real world (“illusionism”) but as translations of attributes, ideas, and even emotions onto paper. In drawing from observation, children focus closely on the details of the object and may notice details they previously overlooked. They also bring their own store of knowledge about and experiences with the object to the task. As Nancy R. Smith, Laraine Cicchetti, and their colleagues put it in their book Observation Drawing with Children (1997), Observation drawing can be defined as responsive drawing because it helps the artist and the viewer to become aware of the elusive as well as the obvious qualities of subjects…. Observation drawing can entail responding to the expressivity of an object or imaging one’s personal vision of an object. Representation, then, is secondary to emotion…. Finally, an observation drawing can be an exploration of artistic issues important to the artist…. A [child’s] drawing carries sufficient information for her, but not for many adults.

Adults often look at children’s drawings for representational elements that they can recognize and translate, and they measure the work’s success in those terms. Some children seem to hold their drawings to the same standard, claiming “I can’t draw that.” “I don’t know how to draw,” or “That’s just scribble-scrabble.” But much of observation drawing is about the process and the conversation during the drawing rather than the remnants of the process remaining on the paper. Indeed, outside the context of conversations and shared experiences with the children as they were making these drawings, the drawings themselves might convey very little meaning. By encouraging children to draw kitchen tools, we aimed to show them that drawing is a highly individualistic process, that it is an activity everyone does, not just “artists,” and that they can find and share their own meanings in whatever they see.

Christian said about the grater, “I’m going to start with the handle.” He drew a straight line (A) and then added a short vertical line (B) going down on the right. He then drew a curving line (C) from the left of the horizontal back toward the right to make a rectangular shape. After looking at the grater for a while, he made several quick repetitive downward strokes (D). The teacher said, “Tell me about these lines.” Christian responded, “Those are the things that go through the holes.” (We had been using the grater the previous week to grate carrots for muffins.) Christian thus drew not only what he saw, but also what he didn’t see at that moment: the grater’s implicit action. When his drawing was complete, Christian wrote his name in the upper left.

Rebecca easily turned drawing the grater into an activity serving a higher purpose —drawing herself! But she also observed the grater very closely and carefully integrated what she discovered into her very personal drawing. Immediately on looking at the grater, she drew a large rectangle (A) and then made a row of three circular shapes (B) near the top. She paused for a moment, added the upturned curve under the three holes along with hair, and exclaimed, “It’s me now!” The teacher said, “It is! But what else do you see on the grater?” Rebecca picked up the grater and turned it around to see all the sides. She then drew what appeared to be arms, hands, legs, and feet. The teacher asked, “What about the handle?” Rebecca immediately drew a rectangle (E) on the head and said “For my hat!”

Ellie said while drawing the whisk, “There are lots of lines…” (A, the wire end of the whisk) “…and a blue one to hold it” (B, the handle). “There are little lines…I’ll count them…1…2…3…4.” The teacher at first thought Ellie was talking about the lines where the wire connected to the handle, but as Ellie...
counted she was pointing to the four bumps on handle grip.

Ethan took a while to get comfortable with drawing from observation. He started with the grater, noticing all of the circular shapes, and tried very hard to form circles on the paper. He was frustrated with his attempts but wanted to persevere. When he finally finished his grater drawing, he wanted to try the whisk. Placing the whisk in front of his paper, he made a series of contiguous lines (A) that went up and down repeatedly. To the teacher’s prompt to tell more about these lines, Ethan pointed to the wire end of the whisk and said “That part!” He then declared, “I’m going to draw the handle.” Ethan made a horizontal line (B) and then counted as he crossed this line with three shorter vertical lines. When asked to explain these marks, Ethan pointed to the bumps on the handle.

Interestingly, though Ellie and Ethan came to school on different days, they took similar approaches to drawing the whisk. They both made note of the handle bumps and used pencil lines to represent number rather than shape. They looked at the whisk and what was relevant to record about it through a much different lens than we adults might. By asking not “What is it?” but “Tell me about this line” or “What else do you see?” we gain a better understanding of children’s intentions and strategies.

The King and His Friends
A storyplay by Armando, Scout, James, Francesca, Niklas, and Kylie, East PM

There was once a King. He lived in a palace. There was a frog and a frog and a bunny. The King was a nice King. He was called only King.

There was two princesses. The princesses went for a walk in the forest and got lost. The Frogs jumped on the school bus. Then they went to the forest. They couldn’t find the princesses. So the Bunny came and hopped to find them.

They all realized that the King had fallen asleep. He didn’t wake up. Suddenly they all went to sleep too.

They all slept for a long time. Then for a short time. Then they all woke up.

Along came the bunny and woke them all up. They were all very happy to be together at last. Thanks to the bunny that had helped them a lot.

They played, sang and ran and had a great time.

They were all very happy to be together at last.

They all live together for the best of times.

The End

—Documented by Corina Martinez, parent

In storyplay, children write and then act out their own stories. Children have a chance to express their ideas, put themselves in the role of someone else, and practice cooperative interaction as part of a cast.
“Feel something hard!” says Ethan O. “Let me see,” says Eli. The boys continue digging in the sand area. “It’s a bone!” exclaims Cole. “No, it’s a dinosaur bone!” shouts Ethan excitedly. The children keep digging to dislodge the big skull bone from the hole they have discovered.

As teachers of young children, we begin by provisioning the environment with accessible, open-ended materials and tools that invite children to action. In this case, the materials included not only sand but cow bones we buried in the sand. The initial discovery by our group of paleontologists got the ball rolling for the Center AM project for the quarter: excavation. The project was further supported and encouraged by a couple of students who share a wealth of knowledge about dinosaurs—their names, identifying features, and fossils.

During the excavation project, many children became involved in digging for treasures and bones in the sand area, soon transforming this area into an archeological site. The children made flags to mark their potential finds. “This is where the bone is buried.” Matthew K. stated matter-of-factly as he pushed the pole with a flag into a soft spot in the sand. Some children marked their areas with X’s. Children liked the flexibility of being able to move their flags and change the digging site. They studied and created their own maps to indicate the way to the buried treasure. Once they identified the area to be excavated they marked it off with tape and yarn.

As a group we constantly gathered more information about archeology with the help of books, stories, visits, and the first-hand experiences of the children. Children researched the bones they discovered, studying books to make comparisons and forming many theories. (The most popular theory was that many years ago the dinosaurs played in our yards.) Molly’s dad, Michael Shanks, an expert archeologist, brought in many artifacts such as pottery and bones from ruins. He showed the children various archeological tools and even several tools that were put to good use at the sites. His visit triggered a lot of thinking and questioning, such as James’s “How do you know how old the artifacts are?” and Ethan’s “How do you know where to dig?”

Throughout the project children had ample opportunities to represent their growing understanding of the topic. They told stories, made maps and tool belts, pieced found treasures together, and experimented with tools to unearth, clean, and care for found items. As the project unfolded, teachers photographed the children’s activities and wrote down children’s stories, plans, and conversations. This documentation on the bulletin board provided children, parents, and teachers with a storehouse of memories and a springboard from which to research further.

Looking through one of the books, Ella. saw a picture of a carp skeleton and decided to make one out of clay. First, she made the spine then rolled out some small bones connecting them to the spine. Ella then continued working on the tail and the backbone. Hannah H. helped her make the head.

Looking through an Eyewitness Book, Molly noticed and recognized a photograph of an ammonite, and decided to make one out of clay. Molly rolled out a long, thin cylinder, and wrapped it around itself to make the shell. With a popsicle stick, she carved out the grooves in the shell. An actual ammonite was brought into the classroom, and that, with Molly’s sculpture, inspired several children to make ammonites of their own.
JAMES: I see the ring. Look! It’s going to have babies. It’s going to have eggs. I found a worm that’s about to have babies.
NIKA: Worms don’t have babies that are eggs. They are not born in eggs. They are born in tummies like I was born in my mom’s tummy.

One rainy day last November, the children in East PM noticed a huge puddle under the redwood trees by the door. They began talking excitedly, pointing, and asking questions. Armando picked up some worms and announced to the group, “We need to collect them!” Returning to the classroom, the children talked to each other about their own experiences with worms. Our investigation of worms had begun.

In order to investigate, children need opportunities to observe, question, and research. We encouraged the children to formulate and ask their own questions about worms so that they would take some responsibility for their learning and become actively involved in determining what they wanted to find out. Listing their ideas, thoughts, and questions gave us a starting point for the project and encouraged much discussion. Can worms swim? What do they eat? How do they move? Where is the head? Do they have ears? These are just some of the questions that we used to develop the curriculum for the quarter.

After sharing in worm collecting, we had over fifty worms to house and feed and only a large cardboard box in which to keep them temporarily. Finding out how to take care of these worms was a highly motivating experience for both children and teachers. As teachers, it is our responsibility to scaffold the children’s learning by talking to them about what they are experiencing and helping them represent what they are observing. Frequent trips to the school reference library and visits from experts helped the children clarify some of their misconceptions and stimulated their thinking. Sarah Smith, director of the Home Composting Education Program in Santa Clara County, and Joleen Hsu, a volunteer, visited our classroom and set up a worm compost with the children in February. Wilhelm Grotheer, our carpenter, offered his expertise and provided a chance for the children to use their own woodworking skills by building a terrarium. An iMovie captured this event and was played on the classroom computer, allowing the children to revisit the experience with their parents.

The project finale was the exploration of worm movements in the creation of a worm dance. The dance evolved from the children’s own observations of worm movements and extended to an elaborate production: tunnels were constructed out of large boxes and arranged around the roots of a cardboard tree; music was chosen and costumes were made using found materials and copious amounts of tape! Parents were invited to watch as the children performed. Allowing children to represent their experiences actively not only helped them interact effectively with each other but also deepened their understanding and knowledge of their world.

I made the eggs. Those are the worms. By Bobby M., age 4

It [the worm] makes a point so that it can get through dirt. Instead of eating it, they can poke through. By Daniel A., age 5

This is the baby one [The one inside the ring]. It’s still inside its egg [ring]. Uh uh, it cracked out. These worms don’t make babies. They only make poos and they are good for flowers. By Ryan R., age 4

From left to right: Brigid and Francesca digging for worms in the playyard; Sadie and Nathaniel sorting redworms to set up a new compost; performance at story time. The children selected the music and choreographed the dance.
Parents are always welcome at Bing Nursery School, and they can participate in their child’s first school experience in many ways, from fundraisers like the annual auction to family events like the Bing Fair to working in the classroom alongside teachers. This past year, during the last week of April, West PM hosted the first annual Dads’ Week. We invited fathers, grandfathers, and uncles to come into the classroom and lead an activity with their child and his or her classmates:

Come for the afternoon, or stay an hour … any amount of time will be welcomed and appreciated … share some of the “tools of your trade” or a favorite hobby. Teachers will gladly assist. A sign-up sheet is available to schedule your visit. Here are some ideas for activities that you might want to lead, or come up with one of your own.

• Coach a game of baseball (team up with another Dad if you like!)
• Shoot hoops
• Make a pizza, pancakes, bread, muffins … or a favorite recipe you like to do at home
• Have snack at your child’s snack table (2:30-3:00) and read a story … or read stories on a blanket under a tree
• Dig, plant, water in the garden
• Push children on the swing
• Make sand castles
• Play a musical instrument … we have a piano (duets welcome!)
• Build with blocks
• Make paper airplanes
• Blow bubbles from the bridge

Many dads came up with ideas of their own. One brought a book to read that was his childhood favorite. One made a cake with the children using a recipe passed down by his grandmother. One brought his flute and played an open-air concert, while another shared his passion for the piano and played duets. One father brought a favorite board game to share with his daughter and her friends, while a dad who is a visiting Sloan fellow showed the children a scrapbook he and his wife had assembled about their native Peru. Another father strapped his younger child to his front so that his hands were free to blow bubbles off the bridge to his son and friends below. Another brought all the ingredients to make homemade ice cream.

Many fathers enjoyed the opportunity to observe their children in a setting of their own, away from home, interacting with their peers.

“It’s good for me to get a sense of what Jack does during the day and how he interacts. It’s fun to see him in this setting. He was very excited to show me everything and to meet all his friends.”
—Chris Molumphy (Jack’s father)

“I’m in the Sloan Program at Stanford and I like this better than studying! I think this is a fantastic opportunity to meet my son’s friends. It’s important for...”

Above left: Courtney’s father, Lee, cooking with the children; center: Gautham’s father, D. Bommi, reading books; right: David’s father, Raul, blowing bubbles. Left: Ruthie’s father, Fred, pushing children on the tire swing; right: Jaisel’s father, Jaspi, making paper parachutes.
him too. Children feel proud to see their father doing something.
—Pablo Gomez (Nicolas’s father)
The thing I remember most about elementary school is making ice cream. I’ve been meaning to come into the classroom and do this all year, but something always comes up. Once I signed up for Dads’ Week, I felt… “I’m committed!”
—David Liang (Tommy’s father)
Some fathers later commented that they enjoyed meeting not only their child’s friends but also other fathers.

Having something formalized, like Dads’ Week, serves as a lightning rod for doing things you would like to do, but never get around to doing. Knowing that other dads will be here makes it more comfortable and creates a feeling of camaraderie.
—Justin Birnbaum (Madeline’s Dad)

Some dads felt the experience of working in the classroom gave them a better understanding of what nursery school teachers do.

[Nursery school teaching] is a lot of work! I liked Dads’ Week and just spending time with my son and his buddies. He only gets to be four once!—Tim Dooley (Connor’s father)

Dads’ Week gave many fathers a deeper understanding of the Bing philosophy.

Over the last four years, I have loved coming into the classroom to watch my children. It’s so fascinating. You really get a good firsthand understanding about learning through play. I’m known as the Pizza Man at the Bing Fair and the Parachute Man in West Room! I made parachutes three years ago with my oldest son and it was very popular. Jaisel has been telling me all week that I’ll be coming in on Friday to make parachutes. I would encourage all parents, especially dads, to come into the classroom at least once a quarter.
—Jaspi Sandhu (Jaisel’s father)

It’s always fun to take part in David’s life. Bing has played a very important part in David’s education. I always feel welcome at Bing because Bing recognizes the importance of both parents being involved.
—Raul Santana (David’s father)

For a brief period of time in late April 2002, in the heart of Silicon Valley, cell phones were turned off and work was almost forgotten. Instead, the sounds of fathers, grandfathers, and uncles talking and laughing could be heard as children were swung so high their feet reached the wisteria branches, while paper airplanes and bubbles sailed across the cloudless sky and the smell of chocolate chip cookies wafted through the air. It was the Week the Dads Came.
This past year, Helen Bing gave each classroom a New Year’s present of a potted amaryllis. The children speculated on what color their flower might be.

I think it will be orange!
Maybe pink.
I think it will be white.
Red!

The teachers prepared color speculation charts based on the children’s guesses.

The children measured the height of the stems using strings and compared: Which is the tallest? Which is the shortest?
I think it is 3 inches.
This one looks like 10 inches.

One weekend in early February, the amaryllis bloomed! The children tried to remember what color they had thought their flowers would be. They looked at the color speculation charts to compare their guesses with the actual color.

Some of the children wanted to smell the flowers.
I think it smells like an orange.

In some classrooms, teachers carried the amaryllis plant out to the patio to get some sunlight. They set out watercolors or pencils so the children could paint or draw their observations and interpretations.

—Nancy Howe, Head Teacher
Consider this scenario. You are given the chance to spend two days away from home, in a hotel near the beach, with an opportunity to engage with other early childhood professionals, laugh and socialize with fellow Bing teachers, and ponder your commitment to young children. Not only that, you’ll return home with innovative ideas to incorporate into your classrooms. Who could refuse?

Several Bing teachers jumped at this opportunity in March 2002. The destination was Long Beach and the event was the annual conference of the California Association for the Education of Young Children (CAEYC). Early-childhood professionals from various teaching settings gather to discuss issues related to children and families and are challenged to act on behalf of those groups. Participants may choose from sessions covering policy, curriculum, current research, family relationships, and technology, among other topics.

One remarkable session was “All These Children Do Is Learn” by Laurie Prusso, a full-time instructor at Modesto Junior College, a former teacher with over twenty years of experience, and a mother of six boys. Prusso asked participants to reflect on how their own nursery school experience differed from that of today’s children. Many of us adults attended a half-day nursery school and returned home to our waiting mothers. Today, in contrast, with a significant number of mothers working, children are often in full-time daycare. Parents struggle with this change, not only because they have less time with their children but also because they question whether they are doing enough to prepare their children for what lies ahead. And early-childhood programs have been pressured to change accordingly. Instead of seeking the “home model” in which children have ample time to play, explore, and flow, parents often look for “preschools” that follow an institutional model in which children are prepared for school. In response, teachers must be sensitive to the outlook of parents while encouraging them to tap into their own childhood experiences as a way of developing a healthy perspective on their children as learners.

Adults with young children typically remember spending their early childhoods in unstructured play, such as digging in the sand, running through the sprinklers, playing hide-and-seek after dinner in the summertime, and running back and forth to the neighbors’ yards. The specific examples varied, of course, but children shared a feeling of freedom and mobility combined with the security of being watched not only by their own parents but by neighbors as well. These children had no academic preparation, yet they went on to be successful in school and productive as adults. They did so, Prusso claims, because they had time to explore, to sort out social conflicts, to learn by play how to live in the world. Reclaiming faith in play-based learning is critical for young children and for our society.

Teachers have a special responsibility to articulate for parents and the broader community how learning takes place through play. The first step, according to Prusso, is a learning environment in which children have long periods of uninterrupted time to experience self-direction and freedom. Too much structure limits children. Experiencing challenge and conflict helps them develop problem-solving skills and gives them a feeling of empowerment. Children need to make choices, including what to play, whom to play with, and what materials to use. Playing alone or in parallel or collaboratively, with many levels in between, helps children develop physically, cognitively, socially, and creatively. The teacher’s role is to help define children’s interests and to provide the learning environment and the materials that encourage exploration, practice, and conceptual learning. The experience is academic in that it motivates children for further exploration and gives them a foundation. Building with blocks, for example, they learn to use language, to plan and decide, to organize the world spatially, to listen and wait, and to develop eye-hand coordination. Using play dough, they master the concepts of reversibility, comparison, and volume, learn impulse control as they wait for tools from a friend, and develop assertiveness as they ask for what they need or say “I’m not done yet.” All of these skills are “academic” and prepare children to enter elementary school as learners because they are self-motivated and have a sense of their own control.

Prusso ended her presentation with the recommendation that teachers evaluate their programs to see how much uninterrupted time they give children to play. She took an informal survey of the audience to get a sense of how much time most settings allow. One-half hour per day was the norm. I felt proud and pleased to raise my hand when she asked if anyone’s program allowed for as much as two hours of time. Sadly, I was one of the few who could make that claim.

I returned from the CAEYC conference with the affirmation that Bing sets and maintains the appropriate standard for an early-childhood program at a time when the trend is toward a more academic or structured approach. We should all be proud of and vigilant in our commitment.
Last November I traveled with nine other Bing Teachers to Anaheim, California, for the seventy-fifth annual conference of the National Association for the Education of Young Children (NAEYC). Thousands of early-childhood educators, care givers, and advocates met to improve early-childhood professional development and thus improve program practices with young children throughout the nation.

For my three days at the conference, I chose sessions focusing on a variety of topics, such as music, play practices, and literature. One of the most memorable sessions was given by world-renowned scientist, environmentalist, and humanitarian Jane Goodall. She introduced her new program “Roots and Shoots,” which helps children develop care and concern for animals, the community, and the environment. Through sensitivity to the environment, early-childhood educators can help children to become aware of the world around them, to learn more about particular topics of interest, and even to improve on the conditions of the world around them however they see fit.

Another session, given by Eric Hoffman, a Master Teacher at the Cabrillo Community College Children’s Center in Aptos, California, provided much insight into superhero play and the fulfillment it has for young children. Between two and six years of age, children are figuring out their own independence, or power, within peer groups, with adults, and within the world as a whole. Gaining power, leadership, or independence in life is a constant struggle, but a child who plays the role of a fantasy superhero can instantly become “all-powerful.” By supporting such play, teachers and parents can support the child’s power and teach a bit of responsibility at the same time. For instance, the “powers” of flying, super-strength, and even laser-blasting wrists (or, lately, spider-web-blasting wrists) can all be channeled from simply “fighting bad guys” into the admirable work of helping people and rescuing those in trouble. An added plus to this redirected hero play is that it can be easily compared to the work of real people in the community. When this similarity is pointed out to children, they often change the focus of their hero games and assume the responsible and powerful roles of fire fighters, police officers, paramedics, and doctors. With a positive humanitarian focus to their play, whatever powerful role children choose to portray will aid them in understanding how to be a helpful part of a community.

A storytelling session given by Rebecca Isbell, professor at East Tennessee State University and director of Tennessee’s Center of Excellence in Early Childhood Learning, introduced the benefits of storytelling without a book. Children are bombarded with images but have relatively few opportunities to create their own. Telling a story without any given images provides children a chance to do just this. The creative imagining is further strengthened when a story is told repeatedly so that children can embellish and add to their original images. The more storytelling they hear, the better children become at conjuring their own images. Because they can make more eye contact with a storyteller than with a story reader, children also tend to feel more connected with the story. They remember it better and are more likely to retell it themselves, even tailoring it to their own liking while adding their own original images. Through repeated storytelling, children can become imaginative storytellers themselves.

As valuable as the NAEYC sessions were, the breaks between them were possibly more enlightening. I met teachers from all over the country, discussing with them different approaches to early-childhood education as well as the content of the sessions. I returned to Bing rejuvenated and determined to put all I had learned into practice. Since the conference, I have become a resource for children’s interests in the natural world, more understanding and respectful of children’s hero play, and an enthusiastic storyteller. In addition to all this, I am now a nursery-school teacher who feels connected to the enormous mass of caring early-childhood educators across the nation.
Ella Jenkins, one of my favorite children’s musicians, spoke and sang at the National Conference for the Education of Young Children in November. Jenkins has been working to benefit children’s music education for decades and was celebrating her thirtieth anniversary with Smithsonian Folkways recording studio (www.si.edu/folkways).

Jenkins began by acknowledging the loss we all suffered in September 2001. We sang “Shabat Shalom” together with hands clasped and heads bowed, sharing a musical moment of healing. Jenkins spoke of the therapeutic capacity of music to help us all in times of difficulty and to join us in one voice to express our feelings. When people sing together, each singer has a personal as well as a communal experience, the combined voices adding to the expressiveness of the music. Through song, too, we connect with other cultures and our own mixed cultural backgrounds.

To commemorate her thirty years of celebrating diverse cultures, Jenkins performed songs from her album “You Sing a Song.” Without lecturing, she also conveyed the important concepts to be instilled through music. First, to illustrate thinking tunes, she used some repetition with simple, delightful melodies in a limited range of pitch—for example, “You Sing a Song.” To make repetition more interesting, she made small changes in verse, such as “You clap your hands and I’ll clap my hands,” and other actions involving whole-body participation. This concept then leads to feeling rhythms, becoming sensitive to the beat of the music. Call-and-response songs such as “Did You Feed My Cow” and “Who Fed the Chickens” require children to follow the rhythm that the leader establishes. Finally, becoming sensitive to the expressiveness of music happens through modeling lyrics in another language. Jenkins sang “This Train” with great emotional content: in a warm singing voice, slow but lively, she picked up the pace to convey energy. This concept of music comes naturally when you are singing something you cherish.

Singing with their children is the most important musical training parents can give their children. By singing with feeling the songs they love, adding movement and simple instruments, parents will prepare children not only for a lifelong love of music but also for myriad skills and potentials we have yet to discover. Using recorded music, such as Ella Jenkins’s many albums, can augment parents’ repertoire and inspire family sing-alongs for years to come.
Kindergarten Information Night

By Karen Robinette, Teacher

Kindergarten Information Night took place on January 31 at Bing Nursery School. Local pediatrician Dr. Rick Lloyd, Ohlone School principal Mrs. Susan Charles, and Escondido School principal Mr. Gary Prehn presented information and answered questions pertaining to kindergarten children and kindergarten programs.

Rick Lloyd began by stating that the reasons for not sending a kindergarten-age child to kindergarten are few. As long as children can coordinate their large and small muscles, speak clearly, and take care of their bodily needs, they are ready for kindergarten. Although the popular wisdom has it that older children do better, any advantages to withholding children from kindergarten disappear by third grade. At the same time, children who are held back may face problems later on, such as early sexual maturation relative to others in their grade.

Developmental changes occur rapidly among children aged four to six, so kindergarten-age children vary widely in their development. Preschool children may be immature in their speech, exhibit separation anxiety, and be more demanding than kindergarten-age children. In just the short transition to kindergarten, the same children develop longer attention spans, have little or no difficulty in separation, learn to follow directions, and develop their listening skills. Kindergarten-age children generally want to please, are positive and accepting, and enjoy life. They live in the here and now, not in the past or future. They haven’t yet developed an idea of permanency and so do not understand concepts such as death. They are becoming aware of their own nature. Finally, we need to guard against undue separation, or absentee parenting, which can occur when parents are overworked.

Susan Charles and Gary Prehn answered the following questions from the audience.

How would you describe the expectations for what a child should know before entering kindergarten?

Kindergartens in the Palo Alto district do not expect children to know anything. What is expected is that children will be ready to separate from their parents and that they will come ready to listen, share, and participate in the program. The school is responsible for teaching them to read, write, and do math. Children are accepted wherever they are on the developmental continuum. Children should come to school believing that learning is fun and exciting, which can’t occur if they are put under stress too early.

How do you put this philosophy into practice with current California state standards?

Fortunately, the Palo Alto district is already ahead of most of the state standards, which have been embedded into the curriculum all along. Thus, the state standards have not impacted the district.

If you don’t live within the Palo Alto district, how can you tell if a school is good?

You should not rely on test scores. One of the best ways to assess a school is to ask parents who have children attending there. They should be able to report that their child is learning, has developed social relationships, and is enjoying the school experience.
How do you get the right balance of activities for children this age?
Children will be exposed to many things in kindergarten. If they develop a particular interest, try to find ways to support that interest. Don’t overschedule children; instead, offer opportunities without requiring participation. Children need to engage in play and have down time. They need to learn to think for themselves and entertain themselves. The phrase “I’m bored” often indicates that children are waiting for what is scheduled for them rather than by them.

Changing Roles
Two outstanding Bing staffers, Beverley Hartman and Jennifer Winters, have traded places. Bev began teaching at Bing in 1983 and served as Bing’s assistant director for the past five years. This fall, she returned to the classroom as head teacher of East AM. Jennifer has been teaching at Bing since 1995 and has been head teacher in East PM and later in East AM since 1996. This fall, she assumed the position of assistant director. Jennifer and Bev both continue as lecturers in psychology at Stanford, teaching Psychology 60A, Developmental Laboratory Section, and Psychology 146, Observation of Children.

A Visit to the Stone River Sculpture
Last winter, the East PM children visited the Stone River sculpture on the Stanford campus. A work by the British environmental sculptor Andy Goldsworthy, Stone River is built of some 6,500 stones salvaged from university buildings damaged in the 1906 and 1989 earthquakes.
Field trips to public art offer the children an opportunity to experience art. Teachers and parents facilitate children’s exploration by asking open-ended questions, writing down their words, and providing clipboards and pencils. On this trip, the children talked about the sculpture and drew pictures. Back in the classroom, they reflected on their experience while looking at their drawings and photographs taken of their visit.
Documented by teachers Chia-wa Yeh, Maggie Monge, and parents Regan Reinhold, Ross Colvin.
For more information on the sculpture, visit http://www.stanford.edu/dept/SUMA/Goldsworthy.html

What do you think about it?
Penelope: I think it’s about something that happened a long time ago that died.
Scout: It looks like a snake but there’s no water.

How do you think it’s made?
Alec: They built it. They shoveled it up because it’s heavy. Somethings are under it—some kind of yellow things.
Penelope: They made it into bricks. Then they put it where the bricks had to go. I think they put it together with tape and glue and then since we can’t feel it, it just got cut by the rocks’ pointy edge.
Scout: With rocks and stones. He stacked them up and put some glue. They painted it, glued it, waited for a long time and just came back one day. That’s how they got stuck together.
Healey: He digged a hole and then put them down. They glued it together and maybe they use mud too. They also use big rocks and stones. They put some glue on the bottom and then it dried.

This is a hammer. Those are the bricks. I think that’s how they put it together.
These are the lines and these are the stones. By Healey M., age 4
Bing Children’s Fair

The Bing Children’s Fair, a family event held each May, is one of the two annual fundraisers at the school. The proceeds benefit the Bing Nursery School Scholarship Fund.

Some of the activities available at the Bing Children’s Fair are fishing (top), wood gluing (center), mural painting (center middle), and water works (center right). The Stanford Band (bottom right) played at the Fair. Children dancing to the band (bottom left). Dean Wilken, Bing parent, performed a puppet show for the children (top left).

A special thank-you to Co-chairs Beth Keller and Joan Joss and all the parents and staff who made this event possible.
The inspiration for the Harvest Moon Auction this past year was *The Broody Hen* by Olivier Dunrea. Dunrea’s reading at Bing, generously funded by Helen Bing, generated excitement for the upcoming event. The auction went off without a hitch and had a real down home flavor—bales of hay, stalks of corn, chuck wagon dinner, and all.

A Night on the Farm raised $150,000 to benefit the Scholarship Fund for Bing. Bing is one of the few nursery schools in the country to fund a substantial financial-aid program. Its scholarships extend the reach of opportunity and promote the diversity that is so important to our community and our world.

The auction succeeded because of many special contributors. Co-chairs Julie Sternfield and Carmen Dowley did a spectacular job leading a tireless team of volunteers and tracking down donations. Michael Olmstead in his elegant char-treuse tuxedo was an outstanding master of ceremonies, a performance highlighted by his original song “A Tribute to Bing.” Helen and Peter Bing once again made a significant and generous donation of $50,000 to the Scholarship Fund. And Sun Microsystems provided support and an important gift of $25,000 to the fund. Thanks to all.

### Auction Committee Chairs

- **Auction Co-Chair** Carmen Dowley
- **Auction Co-Chair** Julie Sternfield
- **Class Gifts** Susan Scheel
- **Graphics** Dory Bleich
- **Solicitations** Julie Sternfield
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- **Catalog** Dory Bleich
- **Catalog** Natalie Mason
- **Catering/Beverages** Michelle Olmstead
- **Catering/Beverages** Deborah Risi

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*Chicken with eggs in tummy.*
By Joseph K., age 5

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Upper right: Writer and illustrator Olivier Dunrea reading from his book *The Broody Hen*. Above right: Children and their families attending the book reading event funded by Helen Bing. Above left: A wonderful time to catch up with friends at the auction. Left: Hearty food at the auction; bidding on auction items.
Fiesta de Bing!

Harvest Moon Auction 2002
Bing Nursery School at Stanford University
Saturday, November 2, 2002 6pm Schwab Center at Stanford
Cool Auction items Cool Music, Food & Drinks Hot Time for all
Friends & Family welcome Something for everyone
Co-Chairs: Lynn Brown & Michael Olmstead
For more info, contact Lynn at 650.325.8878 or gijik@pacbell.net

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