Director’s Column: How Young Children Learn

By Jeanne W. Lepper, Director

The world is so full of a number of things, I’m sure we should all be as happy as kings.
—Robert Louis Stevenson

What a beautiful child!” the parents exclaim over their new baby. Thus begins a life-long relationship of unconditional love and support that is essential for the child to thrive and develop. This nurturing is the foundation for the sense of security and self-esteem that directly affects a child’s ability to achieve success later, to learn, as Robert Louis Stevenson would put it, about “a number of things.”

Here at Bing Nursery School, of course, children’s learning is the primary focus of parents and teachers. Consciously or not, we are all guided by certain principles of children’s development.

Children Are Good Observers
Children learn from actively investigating the world around them. Coming upon a construction site, for instance, a four-year-old will be curious about the activity. The adult with the child should take the time to stop, really look at what’s going on, and direct the child’s attention to the details. “Let’s watch and see what happens while that dump truck unloads dirt. See how big the wheels are?”

Children Respond Well to Open-Ended Questions
Open-ended questions encourage children to think and reflect. “What made the shovel move like that?” “What do you think the driver is going to do now?” “Did you hear the motor make a noise? I wonder what will happen next.” Giving children time to come up with their own answers, even misconceptions, starts them on the road to constructing explanations and building theories.

Children Are Researchers
Assisted by adults, children have numerous ways to explore their interests. A child intrigued by construction vehicles can look in books at home or at the library. Sandbox toys such as shovels, containers, and vehicles can give the child a chance to replay experiences and act out observed roles in order to construct his or her own knowledge. Revisiting a construction site will help the child track the progress of the work, gain more information, and clarify misconceptions. With a sketch-pad and pencil, the child can draw what he or she sees. The adult in tow can jot down the child’s statements to help further the experience at the next opportunity.

Children Benefit from Positive Models
In a natural, almost unconscious, process, children follow the examples set by others, modeling both behavior and the accompanying emotional tone. When children see their parents reading regularly, they want to read and be read to. When they see disrespectful or violent behavior, live or on television, they are just as likely to imitate it.

Positive Suggestions Guide Children
Responding to children positively helps them interact effectively with others. Often an adult’s first response to a child’s undesirable behavior is negative, controlling, emphasizing what the child cannot do: “Don’t throw this ball here.” But usually a more effective approach suggests what the child can do: “That’s a good place to throw the ball.”

Children Learn Through Play
Play is the child’s work, perhaps the child’s most important way of learning. This learning process occurs even when

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**In This Issue**

- From the Director
- Distinguished Lecture
- Guest Speakers
- Research
- Classroom Curriculum
- Conferences
- Events and Information

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Observational drawing of two chicks
by Olivia P., age 5

Photo not available online.
it may not be obvious—when children actively explore their environment and act on their inborn curiosity. Adults can contribute to this natural process by encouraging children’s interests and efforts, talking to them about what they are experiencing, and helping them elaborate and extend their play.

**Children Learn from Their Peers**

When children play with siblings and friends, they learn from each other. As questions, challenges, and conflicts arise, they learn how to solve problems. For example, three-year-old Sarah is in the block area trying to balance a structure and bridge the gap to “put a roof on my house.” Her more experienced four-year-old playmate Lakisha suggests, “Let’s try the longer block—it looks like it might fit better.” This mixed-age play in particular allows children to learn in two ways, both by modeling the behavior of older children and by “teaching” younger children.

**Children Learn by Using Basic Materials**

Young children learn by doing. Helping with cooking, chores, and other real work is of tremendous interest and value to them. This hands-on learning is also encouraged with open-ended materials such as the following:

- Materials for drawing, writing, and constructing: paper, pencils (thick primer ones are best for young children), crayons, scissors, glue, and tape.
- Commonly found materials such as cardboard boxes, which offer children many opportunities to represent their ideas.
- Easel paints and water colors for painting.
- Water, sand, playdough, and clay for sensory experiences.

**Children Learn With Support**

It doesn’t work just to tell children “You must share.” At best, such orders are effective only temporarily while adults are present. However, when adults guide children through the process of taking turns or waiting for a turn, the children can internalize those strategies and use them the next time. For instance, a two-year-old wants a turn pushing a wagon, but both wagons are in use. A teacher says so that all can hear, “Jason is really waiting for a turn. He’ll be ready as soon as you’re done. Let’s see what you can do, Jason, until they’re finished. You can help put some more leaves in the wagon. Here’s a rake to get another pile ready.”

This approach helps the child have a role and a way to enter the play. Such emotionally supportive language also helps children view adults as their advocates. It helps them solve problems rather than turning the situation into an adversarial struggle. Often, when asked first how they could solve a problem, children think of the best solution.

**Photo not available online.**

Dolls and doll clothes, so children can play out roles they have experienced.

Some simple musical instruments and opportunities to listen to music.

The outdoors for investigating nature and for running, climbing, and other active play essential for large motor development.

The more hands-on experiences children have, the more curious and capable they become and, best of all, the more joy they feel at learning “a number of things.”

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How much do parents matter? How powerfully are children influenced by their parents? What role do genetics play? These compelling questions were the subject of a presentation by Professor Eleanor E. Maccoby at the 2001 Bing Nursery School Distinguished Lecture, held on May 31st at Stanford University.

“I want to start out,” said Dr. Maccoby, “by saying of course parents matter in the way children live their daily lives, and in what happens to them. You may ask why would anybody doubt it.” And yet they do. The controversy surrounding this subject was ignited, though not for the first time, when, three years ago, New Jersey psychologist Judith Harris published The Nurture Assumption: Why Children Turn Out the Way They Do, Parents Matter Less Than You Think and Peers Matter More.

The media, of course, went to town with Harris’ message. According to Maccoby, one of the reasons that Harris’ book attracted so much attention was that it let parents off the hook. It said, “You don’t need to feel so guilty if your children give you difficulty and if they aren’t developing exactly as you would like— it’s all because of their genes, basically.” There was, of course, outrage from many leading researchers on parent-child relationships and their effects, but there was also some support for Harris’ work from several prominent psychologists.

“This is really not as bad a book as some of my friends believe it to be,” says Maccoby. “I like its lively style and it’s really quite well written.” For example, Maccoby quotes, “Socialization researchers start out with the preconception, the idea, that there are good child-rearing styles and bad child-rearing styles, and that parents who use good ones will have better children than those who use bad ones. Just as we all know the rules for a healthy lifestyle, we know all the rules for good child-rearing. Give children plenty of love and approval, set limits, enforce them firmly but fairly, don’t use physical punishment or make belittling remarks, be consistent and so on. We also have a pretty clear idea of what we’re looking for in a child. A good child is cheerful and cooperative, reasonably obedient but not to the point of being a robot, is neither too reckless nor too timid, does well in school, has lots of friends, and doesn’t hit people without good cause.” “It’s clever,” notes Maccoby.

Harris’ message is that the effects of parenting have been over-emphasized. She points out that in early studies of socialization when connections have been found between the way parents deal with their children and how the children turn out, they are often quite weak. But, what she omitted, says Maccoby, is that in up-to-date research with better measurement and better ways of choosing what to measure, stronger connections between what parents are doing and what children are like continue to be found. The connections between what parents do now and what children are like are quite strong, in fact. It is more difficult to predict what a child will be like three or four years from now based on what parents do now.

Harris also argues that when you do find a connection, it says nothing about whether the connection has arisen through parental influence on the child—or the reverse. Harris says there may not be influence flowing in either direction. It may just be that stable and well-adjusted and happy parents are that way because of their genes, and they’ve passed those genes on to the children who, therefore, are stable, happy and well-adjusted, so this doesn’t mean that the parents are influencing their children. And, of course, the reverse is possible, as well. That is, an obstreperous uncooperative child can push parents into being coercive or punitive; while, with a child with an easier disposition, parents are able to be kinder and more responsive.

So, is there a way of finding out what role children’s genetic endowment plays? Well, yes, Harris says. She relies upon studies of twins and adopted children and the widespread belief that if genes are important, then environmental influences must be unimportant. Maccoby stresses that molecular geneticists do not take this
view. Genes and environment, they say, are interwoven at every step of the way and genes often need environmental or experiential triggers to turn them on.

But the behavior geneticists make genetic and environmental influences seem as though they are either-or alternatives. Their studies of twins and adopted children find that identical twins are more similar than fraternal twins, and they say that points to genetic factors, because, after all, both sets of twins are growing up in the same family. If anything makes identical twins similar, it must be their shared genes. They also report that adopted children are more similar to their biological parents than they are to their adoptive parents.

On the basis of these kinds of studies, Harris and others with her point of view claim, first, that genetic factors do make a substantial contribution to individual differences among children in many aspects of development. Secondly, they maintain that, among the environmental factors, it is the ones that are not shared by children in the same family that have the most influence on how children turn out. Things such as the parents’ cultural level, their education, their income, the neighborhood where they live, their ethnic or religious background, the amount of harmony or conflict between the parents—these are all parts of an environment that children in the family share, and these things, Harris argues, cannot be making much difference in the way children turn out.

“Now, let me say immediately that behavior geneticists have firmly established that there are genetic factors influencing how children turn out,” interjects Maccoby. While it is true that estimates of heritability do vary, depending on the population group that was studied and how the trait was measured, it is now widely accepted that children’s genetic endowment is an important contributor to their development. Maccoby considers this to be well-established.

But the second claim, that aspects of the environment shared by children growing up in the same household don’t affect their outcomes, is much more controversial. “Indeed, I think it is wrong,” says Maccoby, “even though it’s true that siblings growing up together are often quite different from one another.” The idea that a shared environment doesn’t affect the children growing up in it flies in the face of much of the evidence about environmental risk factors. Growing up in poverty, parental conflict or abuse, dangerous neighborhoods, disorganized family life—these things all have predictive power for poorer adjustment and lower achievement for children in such families. But, if parents, on the other hand provide appropriate support and structure, set limits and monitor a child’s activity and compliance, and see to it that they do comply with the limits that are set and at the same time are warm and responsive—these things increase the chances of a child becoming a competent teenager and adult.

So, why do behavior geneticists continue to report no absolute effects of a shared family environment? One reason, says Maccoby, is that there are influences within the family that may not affect all the children in the same way. The way that behavior geneticists have interpreted their data has meant that they have seriously underestimated shared environment effects, according to Maccoby, who cites numerous studies that show that environmental factors, such as income or parents’ education, in fact have powerful effects. These studies show that outcomes depend not only on the genetic qualities that children bring with them into an adoptive home, but, also on the kind of environment that is provided in the adoptive home, and that these two things join together.

Additionally, other studies document the fact that children react differently to the same kind of treatment from a parent. One study contrasted children who are bold and adventurous with those who are timid and shy. It was found that the bold and adventurous children benefited more from firm control, that the parent needed to be responsive but also willing to make a birdie ‘cuz the birdie [Hummy] needs a friend, and she’ll stop chirping. I’m gonna draw a birdie. It’s gonna look exactly like her.

—Lily Rose L., age 4

—Daniela I., age 5

Hummy the Hummingbird

Hummy was a good hummingbird. And when he was lost, maybe his mom saw him but she didn’t return back. When Hummy was under the tree, maybe he was afraid of dark. And Hummy could’ve been close to a heart attack. And maybe when his mom did return, he wasn’t there. When we found him, he was surprised. And maybe that’s because when his mom was little, she was surprised. I saw Hummy again. He was flying with his whole family. The End.

—Daniela I., age 5
to confront the child and stop unwanted behavior. The timid and shy children benefited less from that kind of treatment and more from gentle treatment. So those parents with a shy or timid child will moderate what they do, and not be so confrontational with the child. “The fact that parents need to adapt their child rearing to individual children’s temperaments doesn’t mean that parenting is making the siblings alike,” says Maccoby. “In fact, it may be making them different, but obviously what they’re doing is not ineffective. They are having an influence.”

When behavior geneticists point out how parents don’t treat all their children the same, they are fond of saying that these are “evocative effects.” That is, the parents’ behavior is being evoked by the child’s action, and the child’s action is driven by the child’s genes—so a beautiful, naturally sweet-tempered child elicits gentle, positive parenting and unattractive children with difficult temperaments are more likely to be ignored or reacted to in negative, irritable ways. So, once again, the behavior geneticists’ reasoning is that it’s the child’s genes that are driving the parental behavior and that any correspondence between what parents do and how children turn out can be safely assigned to the child’s genetics.

“Now, do children with different temperaments influence how their parents treat them? Of course they do. Does this mean that the correlation between what parents do and how children turn out reflects mainly the child’s genetics? Of course not. In any long-standing relationship, each partner must influence the other. To suggest that the parent-child relationship is a one-way street with influence flowing only from the child to the parent is, I think, absurd. Reciprocity is the name of the game between parents and children,” says Maccoby.

It’s not an easy thing to determine just what effect parents are having or how strong or lasting such effects are, Maccoby admits. Experiments can seldom be done assigning families to a treatment or assigning children to a certain kind of parenting. But the evidence that is beginning to accumulate fits in very well with the overall research picture that is forming—that both genetics and parenting matter. In summary, Maccoby believes that there is solid science supporting the view that the ways parents interact with their children does have an effect on them, though, of course, parents are not the only important source of influence on children.

“But why should we care about all of this?” she asks. Because in magnifying and misinterpreting the work of Harris and her followers, the media has created a situation with important political implications. “If one does believe that genetics have a strong effect on children’s outcomes, and that conditions such as poverty, parental conflict, coercive or abusive parenting, dangerous neighborhoods—all the things that behavior geneticists call shared environmental factors—if one believes that these are unimportant for children’s welfare, then there’s very little point in trying to intervene to change them,” says Maccoby. This thinking leads to questioning the existence of any intervention programs—that are designed to improve parenting or give support to parents in general. “There are large numbers of families in this country in which parents are trying to raise children under highly stressful conditions,” says Maccoby, cheerfully noting her liberal bias. “They need all the help they can get. We know how to help them in ways that will foster good adjustment and improved achievement for their children. I think we as a society should do these things.”

One day Hummy fell out of his nest then landed in the grass of Bing School. He realized he wasn’t in his nest anymore. Then all the people found him. Everyone held him for one minute. Then he realized he was in the grass and he wanted his mama to pick him up in the sky. Then he wanted to go home but he didn’t go home. His mama just keeeped flying in the sky. He wanted to go home but his mama didn’t pick him up because she was scared of the people. Later on he got picked up by his mama.

—Sasha M., age 4

Emmett H. and his classmates read books about birds with Intern Harriet Mukisa upon finding a hummingbird in the West room play yard. The children named the hummingbird “Hummy.”

—Emmett H., age 5

Two months later, while talking about what he likes to do at Bing School, Emmett said:

I like to climb trees and look for nests. I found one nest by myself. I went near the library and I found a hummingbird’s nest. Maybe it was Hummy’s because it was so tiny. Hummy’s mom sits on the edge so there’s room for him. When he gets bigger, he flies. But he doesn’t fly away. He still stays with his mother.

—Emmett H., age 5

Photo not available online.

Hummingbirds are very gentle creatures and they also like nectar and bees could sting them.

—Jesse N., age 4
Worms can’t have babies. They’re worms, not animals!” We’ve all heard young children make observations about the natural world that to adult ears sound wrong. But are they wrong, or do they perhaps reflect different theories about how the world works?

Questions like this one are central to the research of Professor Susan Johnson, who recently joined Stanford’s developmental psychology faculty. On September 6, 2000, Dr. Johnson asked the Bing staff to consider whether children merely hold false beliefs about the natural world or, as she proposes, actually have an entirely different world view from that of adults, in the context of which their apparent misconceptions are true and reasonable. If children hold false beliefs, then presumably they would change their views if they were told why their ideas are incorrect. However, if children’s ideas reflect different theories of the world, then changing their conceptions would require changing their theories.

It may be, in short, that adults’ and children’s theories of the world are incommensurable—that is, explaining a phenomenon in one theory involves concepts that cannot be represented in the other theory. However, Dr. Johnson points out a learning paradox: if adults’ and children’s theories are truly incommensurable, so that children cannot represent the adult conception, how can children’s concepts change? Being able to resolve incommensurability is fundamental for the children to change their concepts.

Johnson contrasts two positions about how children gain knowledge. In the accretionist position, knowledge acquisition occurs through a single learning process of enrichment, of accreting more and more details. In the conceptual change position, knowledge acquisition involves not only enrichment but also the creation of new knowledge through analogy, case analysis, and comprehension monitoring.

Prior research by Susan Carey of Harvard University found that children construct adult conceptions of biology between four and ten years of age. Following the accretionist view of learning through a single mechanism, Johnson says, one would then expect eleven-year-olds to possess not only detailed information about folk biology but also accompanying explanatory knowledge.

Separating children’s knowledge of information about animals from their underlying theories about animals might seem impossible. However, Johnson was able to distinguish the two by studying people with Williams Syndrome, a neurodevelopmental disorder in which language and thought seem disconnected. These individuals have mild to moderate mental retardation and difficulty with metacognition, but they also have precocious control over discourse and normal syntax. They are social and can give extensive verbal descriptions, but they cannot provide explanations of causality. There is a disjuncture between the information they possess and their deep understanding of it.

To learn whether people with Williams Syndrome could give causal explanations of folk biology as well as if they could give detailed information about animals, Dr. Johnson compared them with two control groups: children of a matched mental age of eleven years, and children of a younger mental age of six years.

One task involved children in simply naming animals, not explaining causes. On this task, children with Williams Syndrome responded similarly to the older control group. They also performed similarly to the older control group, and better than the younger control group, on a battery of questions about the properties of objects, such as “Do dogs breathe?” “Do dogs have hearts?” “Does the sun breathe?”

However, subsequent tasks showed that having detailed knowledge about living things is not necessarily the same as having causal knowledge about them. When children were asked what kinds of objects are alive, what happens to something that dies, and whether transformations would change animals’ essences, the children with Williams Syndrome answered more like the younger than the older control group. In fact, they showed more animism than either control group, asserting that an inanimate object such as a car is alive “because it moves.” The control groups were less likely to view a car as alive, responding, “It doesn’t feel,” “It doesn’t hear,” “It doesn’t talk,” “It doesn’t have feelings,” “It doesn’t have a heart,” “It doesn’t have a brain.”
The children with Williams Syndrome also held more misconceptions about death, such as that not all people die. And they conveyed a conception of death as a departure or altered state, rather than as a breakdown of the body or cessation of life. For example, their descriptions of death included “It means not to wake up, never to come back.” In contrast, the older control group provided responses such as “They can’t think anymore. They can’t feel anymore,” and “Your heart stops working, they stop breathing.”

In the tasks involving a transformation of appearance, the participants were presented with pictures of animals wearing costumes resembling other animals (e.g., a zebra wearing a horse costume) and with pictures of animals that they were told were surgically altered to give them external characteristics of another animal (e.g., a raccoon with a white stripe resembling a skunk). Individuals with Williams Syndrome expressed uncertainty about whether a costume changed the identity of an animal. They focused on the animal’s outward appearance when asked “What kind of animal is it?” about an animal with altered external characteristics. Their underlying theories about living things did not include the causal understanding found in the older control group. The participants with Williams Syndrome had not bridged the incommensurability between their theories and adults’ theories.

For Dr. Johnson, this work reveals the existence and importance of conceptual change in development: children start with a different set of theories about the world, and if their capacity to reconceive these theories is compromised, so is their depth of understanding.

In her future work, Dr. Johnson would like to shift her focus from biology to sociology, asking, “What does the concept of family mean to young children?” This question connects to the play that occurs daily in Bing classrooms as children engaged in dramatic play enact roles based on their evolving conception of family. Such play may not only reflect but also transform their understanding of family.

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Deborah Stipek Visits Bing

By Jane Farish, Teacher

When I lose perspective, I’m going to put on my jeans and come and hang out at Bing!” So exclaimed Dr. Deborah Stipek, the recently appointed dean of the School of Education, on one of her two visits to Bing during the spring quarter, beginning what she hopes will be a collaboration with the nursery school.

Following a tour of the school, Dr. Stipek discussed her research and advocacy work with the staff. She is a strong advocate for developmentally appropriate practice in both preschool and elementary school and is disturbed that kindergarten teachers are accelerating their curriculum. Dr. Stipek testified in Sacramento against increasing the kindergarten entry age by making the cut-off date earlier. She challenges the assumption that children will score better if they enter at a later age.

Nationally known for her research in motivation, Dr. Stipek studies what makes children want to learn. Her latest focus is investigating motivating environments, or, in her words, “the power of the context for learning.” She has conducted a series of studies on how different contexts influence children’s enthusiasm and learning, comparing teacher-directed preschool programs, including programs using worksheets and flashcards, with more open-ended programs that offer children choices. Finding that the more didactic programs tend to have negative consequences for motivation, she advocates programs such as those at Bing, where “teaching is embedded in natural play activities.”

Dr. Stipek is coauthor of a current bestseller, Motivated Minds: Raising Children to Love Learning (with Kathy Seal). This book, which includes a chapter about “Loving Learning Through Play,” is a guide for parents and teachers on raising enthusiastic lifelong learners.

Meet Our Copy Editor

Jane Aaron, mother of Lucy Aaron, East AM, has been writing college textbooks for twenty years and has published six books for freshman composition courses. As copy editor of The Bing Times, she gave the staff an overview of the writing process that outlined four elements common to any kind of writing situation: considering the audience, allowing time for revision, organizing for the reader, and writing concretely, clearly, and concisely. Jane elaborated on each element with examples relevant to The Bing Times. To extend her talk, she gave every staffer a copy of her book The Little, Brown Essential Handbook for Writers.

—Sarah Wright, Teacher
Children at Bing come from culturally diverse backgrounds, and increasingly they speak a language other than English in their homes. On October 9, 2000, Bing teachers had the opportunity to reflect on their role as educators in a culturally diverse setting and on their support for children learning English as a second language.

Dr. Kenji Hakuta, the guest speaker, has been a professor of education at Stanford University since 1989 and currently teaches courses in language development, bilingual education, and research methods. He has studied bilingualism, language shift, and English acquisition among immigrant students. He has also written or edited several books, including In Other Words: The Science and Psychology of Second Language Acquisition (with E. Bialystok, 1994) and Mirror of Language: The Debate on Bilingualism (1986).

Bilingual education in California took hold in 1968 when the Bilingual Education Act provided federal funding for local school districts to use native-language instruction as well as English instruction. In 1974 the Equal Educational Opportunity Act further provided equal access to education for children whose first language was not English.

Children become bilingual usually through simultaneous acquisition (learning two languages at the same time) or through successive acquisition (learning one language and then another). Children under the age of three who are exposed to two languages usually learn by simultaneous acquisition. Children who are exposed to the second language at an older age usually learn by successive acquisition. The amount of exposure and support the child receives influences the rate of acquisition.

Parents are often concerned that children learning two or more languages at the same time will confuse them and fail to learn any of them well. Bilingual children who combine two languages when communicating are usually offered as evidence for this belief. However, according to Dr. Hakuta, research shows that as children mix two languages, they are using words from one language to support and emphasize the other. Far from being confused, they are taking advantage of the richness of both languages.

Children learning more than one language reap benefits. They gain in cognitive flexibility because they can understand and analyze concepts using more than one language system. They may begin to talk a little later than their monolingual peers, but then they show a better understanding of the way language works—for instance, by separating words from their meanings. In addition, bilingual children demonstrate language proficiency and metalinguistic ability as they translate words for family members, friends, and others.

Bilingual preschoolers may also learn to read more quickly than their monolingual peers because reading involves the same skills as speaking two languages. Understanding that two sounds from two languages are symbols for the same object allows bilingual children to understand that a printed word represents a symbol as well.

Dr. Hakuta warns that children often lose the language of their native culture if no attempt is made to keep it up. And yet maintaining both languages not only allows children to participate fully in an English-dominant society but also encourages children to continue forming strong linguistic ties. Further, the abilities of bilingual children to express themselves in different cultures and with a wide variety of people can widen their perspectives and their opportunities.

Dr. Hakuta’s talk reinforced the need for Bing’s teachers to understand second-language acquisition and to adjust their instructional styles to promote and maintain children’s native language and otherwise meet the needs of bilingual students.
“Hate to admit it, but I love children most for what they give me. Mark Twain said that a person could live two weeks on one compliment. A child who says that they like you, the child who puts his or her hand in yours or wants to play, gives you a big compliment. If working at Bing is any indication, I’m going to live a long time.”

One of the familiar faces at Bing during her pregnancy and then with a baby strapped to her front, Katherine Turner does not have a child enrolled here, but has grown acquainted with many children as a researcher in all of the classrooms. Whether following beckoning children over the hill to see what they find so exciting or asking questions about a spaceship made of wood scraps, Katherine demonstrates her keen interest in children’s thinking.

Katherine came to the Bay Area from Montreal, where she grew up, and obtained a bachelor’s degree in developmental psychology from San Francisco State University. Her research there, under the direction of David Matsumoto, focused on how personality influences the recognition of emotions among Japanese and American college students. Now at Stanford, with John Gabrieli as her adviser, Katherine is pursuing a doctorate in developmental psychology, studying memory. She has been married for ten years and expanded her family last summer with the arrival of Indira Rose Mercedes Turner. Thus this year Katherine has grappled with the simultaneous demands of finishing her degree and being a new mother.

Katherine has collected much of her dissertation data at Bing, working with John Gabrieli on the cognitive neuroscience of implicit memory. In contrast to explicit memory, implicit memory does not require conscious remembrance of a past experience but instead uses past experience to facilitate memory, even without our awareness. To measure such facilitation, researchers examine whether participants respond faster, find tasks easier, or reach solutions with greater accuracy when they have had prior experience related to the task. The positive effect of prior experience on subsequent performance is referred to as priming.

Katherine’s studies examine the developmental course of two forms of implicit memory, perceptual priming and sensorimotor skill learning, among four-year-olds, six-year-olds, and adults. For instance, in one study, conducted with sixteen preschool children and sixteen adults, she asked participants to name line drawings of common objects and animals (e.g., lamp, ship, rabbit). Then forty-eight hours later, the participants viewed incomplete versions of the previously viewed pictures and new images. Across a series of eight partial pictures each image became increasingly complete, and Katherine examined the point at which participants could identify the picture in the series. Looking for priming, she noted the difference in how complete the picture needed to be in order for participants to identify previously viewed versus new pictures—in other words, how much having seen a picture helped participants to identify an incomplete version of it.

Adults correctly identified both previously viewed and new pictures at a less complete level than preschool children did, but Katherine found no significant difference in the magnitude of priming for the two age groups. That is, participants of both ages identified previously viewed pictures sooner than new pictures. Thus, the degree to which previous viewing of pictures facilitates memory is stable by age four.

Katherine’s second study focused on motor skills, taking the research on implicit memory in a new direction. The brain structures supporting sensorimotor learning are thought to mature later than those that support perceptual priming, reaching maturity after children enter elementary school as compared to age two. Would sensorimotor learning follow
the same developmental course observed for perceptual priming?

To explore this question, Katherine used a task that required participants to touch objects on a screen. Seventeen four-year-olds, fifteen six-year-olds, and twenty-six adults observed faces as they appeared in one of four locations across the middle of a touch-sensitive computer screen. The sequence of locations in which the faces appeared involved either first-order or second-order transitions. In a first-order transition, events frequently occur in pairs, such that a face appearing in, say, the second site is typically followed by one appearing in, say, the fourth site. A second-order transition is more complex, involving triplets of events in which the first two previous locations predict the third location. Katherine examined whether participants learned these sequences as they pressed the appearing faces. She encouraged children to tickle the faces and make them laugh (touching the faces on the screen produced a laughing noise).

On the sensorimotor task, in contrast to the priming task, four-year-olds’ performance did not correspond to those of the older groups. The four-year-olds learned the first-order transitions but not the second-order transitions. In contrast, six-year-olds and adults learned both types of sequences. Katherine’s results suggest that while visual priming matures by age four, the learning of sensorimotor sequences matures later. These two types of learning rely upon different areas of the brain: the occipital neo-cortex and the frontal-striatal system, respectively. Thus, these findings provide evidence of how variations in the maturation of brain functioning influences the development of learning.

The connection between brain development and behavior deeply interests Katherine Turner. “One of the most exciting things about doing developmental research,” she says, “is that I have the opportunity to watch children’s cognitions change. This is especially true since I look at cognition from both a brain-based and a behavioral perspective. My daughter gives me new insights every day, so my cup of inspiration is overflowing.”

Creating with clay encourages problem solving and develops an understanding of cause and effect. James placed balls on top of each other to make a snowman. As his snowman became taller and taller, it became less stable and eventually tipped over. James tried again. He discovered that gently pressing down as he carefully placed each clay ball on top of another strengthened and balanced his snowman.

Manipulating clay helps to build children’s fine motor skills, developing the same small muscles in the hand and fingers that children use to write, draw, tie their shoes, or button their clothes.
Children had opportunities for self-expression and development of fine motor skills as they designed costumes for story plays. Peers often assisted less experienced children in a cooperative effort. The story *Stone Soup* by Marcia Brown was extended to a cooking experience as children selected, washed, peeled, and chopped fresh vegetables for our own stone soup served during snack. The soup was “nutritious, delicious, incredible, and edible,” to quote the book. “To think, it was made from an ordinary stone and a magical ingredient called sharing.”

The benefits of storytelling and story plays are numerous. The more exposure children have to narratives, the better they understand how stories are organized, such as the sequential occurrence of characters’ actions and other events and the plot predicaments to be overcome through interactions of the characters. Telling and hearing stories provide young children with opportunities for speaking and listening and, in the long run, contribute to language skills and reading comprehension. In addition, the activities foster teamwork and cooperation as children plan story plays and act together. They learn to listen to others and to respect their ideas. Self-confidence grows as they try new experiences and realize that their efforts are valued.

Excitement mounted as East AM’s fall quarter progressed. Children entered the classroom asking, “Is there a story play today?” They became skilled at remembering lines and adopting the persona of their chosen character. Plots were often changed to accommodate an expanding array of characters. The moral: *You can never have too many foxes!*

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**The River Dragon**

*by Noam S., age 5*

Once upon a time, there was a castle. It was made out of stone. It was very old. There were two princesses named Princess Ruby and Princess Isabelle. The knights were trying to kill the dragons because they were bad. They were trying to eat Princess Ruby and Princess Isabelle. They said, “Oh, no! We don’t want to be eaten!” They were scared.

The knights said to the dragon, “Stop in your tracks!” They were in the moat. They were River Dragons. The princesses were hiding and watching from the window of the castle.

The knights locked the dragons up in chains. “You are safe now!” they said to the princesses. The princesses wanted to kiss the knights. The End.

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In dramatic play, children often incorporate story scripts from books that become familiar through repeated reading.

“Caps! Caps for sale! Fifty cents a cap!” called the peddler. “You monkeys you,” he said. “You give me back my caps!” The monkeys shook their fingers back at him and said, “Tsz, tsz, tsz.”

“Run, run, run! Catch me if you can! You can’t catch me! I’m the Gingerbread Boy, I am! I am!”
Creative Recycling
Using Found Materials to Build Environmental Awareness in Young Children
By Nancy Howe, Head Teacher

I have a collection of crab shells and rocks. I got the crab shells at the beach and the rocks next to a tree. And one of the rocks is all white and shaped like a triangle. And whenever I look at it, it reminds me of treasure. —Pablo

Young children have an inherent capacity to see the worthy in the seemingly worthless, the extraordinary in the ordinary. Intrigued by materials they find on the ground—fallen from a tree, washed up on a beach, lost, discarded, rejected, or abandoned—children incorporate these found objects and materials into their play, relying on their imaginations to create their own playthings.

Teachers at Bing Nursery School have long valued found materials, too, and have incorporated creative recycling into all areas of the curriculum, not only as art materials for collages and assemblages, but also as props and accessories for blockbuilding, water and sand play, science, number concepts, imaginative play, and storytelling. Bing teachers make regular trips to RAFT (Resource Area for Teachers), where donated recycled materials fill a warehouse. The materials are then organized in bins in Bing’s workroom. Each classroom, in turn, has a system for organizing and replenishing a small collection of materials. During winter quarter, East AM and West PM focused on found materials as a long-term project. Several Bing teachers presented a workshop on the subject at the California Association for the Education of Young Children, and in May more than fifty Bing parents participated in the same workshop as part of the Bing Parent Seminar Series. A highlight of the evening was Chia-wa Yeh’s recently completed video, “Found Materials,” which will soon be available to parents for viewing throughout the year.

Found materials offer several important learning opportunities for children. On one level, they help to build an awareness of recycling as a concrete way to respect the earth and honor the natural limits of our planet. On another level, found materials join clay, paint, sand, water, and blocks as unstructured, open-ended media that actively engage young children, help them construct their knowledge and understanding of the world, and allow them creatively to express their thoughts, ideas, experiences, and feelings. Strawberry baskets, cardboard boxes, fabric scraps, buttons, shells, wood scraps—all can be manipulated, adapted, and transformed according to each child’s unique interpretation. In the words of Amelia Gambetti of Reggio Children, “Each object has an identity which encounters the identity of the child and forms a relationship.”

Found materials inspire and challenge children to be resourceful and inventive, to transcend boundaries, to recognize possibilities, and to represent their ideas symbolically. They encourage children to think abstractly, conceptualize, plan, predict, make decisions, and solve problems as they combine materials in inventive ways. Children gain competency in eye-hand coordination and fine muscle control as they cut, assemble, manipulate, use staplers, punch holes, tape, glue, hammer, and drive screws. They develop social skills as they collaborate to help each other, share what they have learned, and model techniques for the use of tools and materials. Children become more aware of different materials and their unique capabilities and affordances, distinguishing features such as color, shape, size, and texture and becoming more articulate in describing what they have made and how it works. Their sense of design and aesthetics increases as they consider form, spatial organization, composition, and the relation among objects. They use found materials as props in imaginary play and storytelling.

At the Bing seminar on found materials, parents learned many ways to use creative recycling at home:

- Encourage children’s impulse to collect rocks, shells, leaves, bird feathers, keys, buttons, and so on.
- Take children on scavenger hunts or collecting walks, carrying a plastic bag or basket to collect household items such as bottle caps and string or natural materials such as rocks, leaves, sticks, pinecones, and shells (see the collecting list below).
- Have available a variety of containers (shoebox lids, egg cartons, baskets, clear storage boxes or jars of all sizes) to sort objects when you return. Using counting, matching, categorizing, and ordering, sort
the collected objects by size, color, material, and other attributes.

- Encourage children to make collages or assemblages with the objects they have found—same-color collages, collages or assemblages using found materials, mini-collages, circle collages. Use egg carton lids for holding selections of natural materials and sectioned egg cartons for highlighting individual items such as a leaf, a shell, or an interesting piece of fabric or paper. Present the materials attractively so that the children feel as if the table has been set for an honored guest. Give children time to handle and explore the objects and talk about their shape, texture, color, size, and material.

- Provide children with a sturdy base (paper plate, shoebox lid, piece of cardboard cut from a cardboard box) and white glue to adhere objects. Clear contact paper set in a paper frame provides a sticky surface for flat materials like leaves, flower petals, or scraps of fabric or paper. Use another piece of clear contact paper on top, sticky side down, to sandwich the objects, and hang the composition in a sunny window.

- Collect props and accessories for dress-up and dramatic play: shoes, hats, bags, a recycled keyboard or telephone, plastic dishes and cups, an old tea pot.

- Provide cardboard boxes of all sizes for creating three-dimensional constructions. The constructions can be glued or taped together and painted.

- Take apart a discarded appliance, using a magnetic screwdriver for easy removal of small parts. Provide children with a container for the screws, wires, and circuit boards they dismantle. Later, they can incorporate these objects into their collages, assemblages, or woodworking. (Caution: Avoid computer monitors and TVs; discard plugs, and supervise small children working with potentially chokeable parts.)

- Retell a favorite or familiar story using ordinary objects as props. Or play a storytelling game, incorporating three objects chosen by the child into a story and then letting the child tell a story with your objects. This is a good game to play at a restaurant, on an airplane, or in the waiting room at the doctor’s office.

The following objects are all good materials for projects in creative recycling. Objects should be clean, nontoxic, free of sharp points and edges, and large enough to prevent swallowing:

- Gift wrap
- Greeting cards
- Dried and silk flowers
- Film canisters
- Strawberry baskets
- Old magazines and seed catalogs
- Styrofoam
- Costume jewelry
- Corks
- Small parts of discarded toys, electronic devices and appliances, clocks, etc.

- Save plastic bottles and containers of all shapes and sizes for filling and pouring in a plastic dishpan, wading pool, bathtub, or kitchen sink. Add a sponge, a little food coloring or liquid soap, and a wire whisk or old-fashioned eggbeater.

- Present the materials attractively so that the children feel as if the table has been set for an honored guest. Give children time to handle and explore the objects and talk about their shape, texture, color, size, and material.

Spaceship made with wood scraps glued together by Jackson S. and Kenny R.

Dialogue with Katherine Turner, researcher

Kenny: It’s a spaceship.

Jackson: It’s going to the moon.

Katherine: It’s going to the moon and then to Mars?

Jackson: No, it’s going to the moon to get some cheese.

Katherine: To get some cheese. How many people are in the spaceship?

Kenny: Fifteen.

Jackson: All of the people at Bing School are going to get there.

Katherine: Wow! Where are the seats?

Jackson: Oh, their seats are right there.

Katherine: Okay, that’s a good set of seats.

Jackson: But if bad guys sit right there, they just pop off. Oh and one more thing. This thing right here: it’s like a telescope.


Kenny: So they can try to find the moon.

Jackson: If you drop the telescope, then it would just like, come back up.
TEACHER: Brigid thinks that people go down [the ramp] slower than the ball because balls have air in them.

ZACHARY H.: They don’t because balls are round and wheels are round, but people are heavier than balls so they can also go faster because they’re kind of— they’re flat on the bottom, and people are flat, but they’re heavier than balls.

TEACHER: So you said that balls are round and that people are heavier. So do we go down slower because we’re heavy or because we’re not round?

ZACHARY H.: Because we’re not round and we’re heavy.

This exchange occurred in East PM during exploration of motion on inclined planes, using balls, wheels, and ramps. The exploration began with rolling wheels of varying size, shape, and weight on the hills in the East yard. Within this mixed-age setting, with diverse languages spoken, the children and teachers came together to test, observe, manipulate, and try again.

Anton Z. rolled a ball down a ramp made with hollow blocks and unit blocks.

From the beginning, the children initiated their own experiments, testing possibilities. For example, after rolling wheels in succession, children began releasing two at a time. The children’s cheers, focused gazes, and dashing pursuits of the wheels revealed their captivation by these objects in motion. During subsequent weeks, the teachers and children used hollow blocks, boards, and climbing structures to create inclines of varying heights and lengths. They even modified the ramps, creating long inclines between climbing structures and traversing through barrels. Most children ran in pursuit of the object, while others gazed riveted at the object until it came to a stop.

The children tested both wheels and balls on these ramps, examining the effects of the rolling objects’ size, shape, and weight on the speed or distance traveled and the impact with other objects. The addition of boards allowed the balls to travel farther and faster, leading to observations such as “See, that one went farther than that one, but that wheel and ball went the farthest until it came to a stop.

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More extended discussions of motion occurred among teachers and peers:

TEACHER: Do you think that the wheel will go higher if the ramp is higher?
KENJI: Of course it will. I have a better idea. Let’s make the wheel jump really high.

GAVIN: That’s not a good idea. It will go off the side.

TEACHER: Well, let’s try both ways and see what happens.
GAVIN: See, it goes faster with the ramp like this. The smaller wheels jump and the bigger wheels go to the side.
KENJI: The bigger wheel gets more balance because it is fatter, but the smaller wheel jumps higher.

Meanwhile, children examined motion on a smaller scale inside the classroom as they rolled cars and cylinders of different diameters down ramps. As a recurring exploration of momentum, children placed cars at the bottom of the ramp and observed the outcome when they were hit by rolling objects. Outside, children examined momentum through dramatic play. Using cones and bowling pins, the children constructed a “bowling alley.” They wrote lists of the children who wanted to bowl, created tickets for them, and recorded their “points” with each release.

During snack time and story time, the teachers prompted discussions of motion that incorporated a wider range of children’s ideas. For example, the following exchange occurred during story time:

TEACHER: How can we get the block to roll all the way across the carpet?
KENJI: We need a higher platform.
KATE: Give it a big push.
MARC: Put a flat board on one of the shelves [block shelves].
MADELINE: Use one of the blocks from outside.
ZACHARY H.: Get a blanket and tie it on each side [of the block area]. Roll a block on it.
LUCY: Put it on top of one platform with a little block underneath the big block.

The increasing interest in balls, ramps, and wheels also led to collaborative wheel games. In one such game, dubbed “Bingo,” several children rolled balls and wheels on a ramp structure in which an initial ramp led to two smaller peaks made from slanted blocks:

If the ball or wheel rolled along the entire length, the children called out “Bingo!” If
it fell off part of the way down, they called out “No Bingo!” In an expanded form of this game, a couple of children exclaimed “Excellent!” instead of “Bingo!” When the wheel rolled only part way down the ramp before plunging over the side, they chimed, “Mediocre.” Finally, they called immediate derailments “Lousy.”

Children who varied in age and language fluency found ways to participate together in examining inclined planes. Children not yet three years old and others who rarely spoke English clambered up climbers to release balls alongside five-year-olds who made predictions and offered explanations. Children did not need to use English to collaborate on creating dams for the balls or on setting up pins for the next round of bowling.

In a 1978 book, Physical Knowledge in Preschool Education: Implications of Piaget’s Theory, Constance Kamii and Rheta DeVries observe that examining motion on inclined planes is a “physical knowledge activity” in which children act on objects and observe outcomes. Such activity fosters not only children’s specific knowledge of objects in the physical world, but also more general thinking skills and knowledge. “Inclines seem particularly rich in potential,” say Kamii and DeVries, “because they enable a child to make an object move by letting go, without applying any force to it.... An incline, therefore, gives the child a special occasion to observe the interactions among objects as well as to structure spatial relationships.” A child’s suggestion for how to make a ball go fast illustrates just such structuring of spatial relationships:

LUCY: Put that thing [A-frame] way back here. Stack blocks and more blocks all the way up to where it is. Like stairs kind of. Then you put one little ramp on the highest bar. And then you roll it down the ramp. Then it lands on the little stairs that we put and it does poppity-pop down the stairs.

In investigating metamorphosis, the children in MWF AM Twos spent the spring quarter observing painted lady caterpillars go through all the stages of transformation. When the beautifully colored butterflies emerged at last, the children watched fascinated as Teacher Kitti lured them one-by-one onto flowers treated with sugar water, where they feasted before fluttering away.

Throughout the stages of metamorphosis, the children used many different mediums to learn about the process. With close views of the caterpillars, chrysalises, and butterflies, the children represented what they saw through drawings, paintings, and clay. Most of the butterflies emerged from the chrysalis stage overnight but one, the morning cloak, emerged as the children watched, awestruck, observing that its drying wings were moving very slowly. Along with the observations, the class talked about metamorphosis at story time, read stories such as The Very Hungry Caterpillar, and sang songs about caterpillars and butterflies. In the project’s culminating activity, the children performed “The Dance of the Butterflies” with colored scarves to the music of Mozart, Vivaldi, and Grieg.
Center PM Looks at Languages
By Tom Limbert, Head Teacher

By late September of the school year, most of the children had settled into Center PM and could say good-bye to loved ones for the afternoon. But some children were still entering reluctantly, tears on their faces and adamantly opposing any attempts by their parents to leave their sight, let alone the classroom. As we teachers struggled for the words to help these children feel comfortable and secure, we realized that in most cases we and the children’s parents also faced a communication challenge because of a language barrier. For any child, learning to say good-bye is daunting enough; for these children that task was complicated by being left with teachers who did not speak the same words as their loved ones, words they had been surrounded with and taught from birth. Their fear and even rage were understandable.

The inspiration for a language project came from an experience Teacher Mary Munday had that caused us to reflect on the communication challenges faced by children adjusting to the program. In March, Mary attended a presentation on multicultural songs and activities at the annual conference of the California Association for the Education of Young Children. She returned to teach the Center PM children a song about saying “hello” in any language. The children responded to the song with noted attentiveness at story time. In the days that followed, children, parents, and teachers collaborated to form a list of greetings in different languages that we could learn together in the song. The children’s eager concentration and competence at learning new words, combined with Bing’s multicultural, multilingual community, encouraged us to extend the study of languages.

The project mostly took place in the classroom’s language/literacy area and then at story time. The class’s older children often take a special interest in writing, but this spring our study of languages significantly sharpened their focus. Many children spent extended time forming letters and, with the help of a teacher, worked hard at writing out each new greeting we learned and the names of the different languages. As they learned to count in different languages, they were also eager to write these new words down. One girl, whose family speaks mostly Korean at home, can now easily count to ten in French and took the time to write down the French words repeatedly. (We teachers were always excited about what the children could teach us about languages, but please do not ask me if I’m now bilingual!) The children were also fascinated with Chinese characters and words they represent, using their growing fine motor skills to replicate the characters with pen and paper.

Pati A.’s mother and sister sang Spanish songs at story time.

At story time each day, we sang songs in different languages and read several stories incorporating different languages. But the most meaningful and treasured moments of story time and perhaps of our entire language study and school year were the many visits from parents who, with their children, taught us words and phrases, counting, and songs in a language familiar to them. Some of the songs were then repeated at successive story times, helping to keep the focus on language and to bind our classroom community through shared learning experiences. The significance of the visits for our study and our classroom showed in the face of the children who stood next to their mothers or fathers and helped to teach the language of their homes.

In the last few weeks of the school year, we rounded out our language project by focusing on sign language. Again, the children were visibly attentive to these lessons and were eager to mimic the signs with their own hands and fingers. This part of the project encouraged us all to think more deeply about language and its importance in our lives. Having looked at sign language for a few weeks, we asked children why we have languages. Andrew responded, “I think I know why we have languages because you need things to say. Because there’s lots to talk about.” Another boy, Aaron Peter, with younger siblings in his home, was aware of the pragmatic function of language: “It helps people know what you want.” Christopher was even more specific: “So they know if there’s a party, or if there’s a festival.”

This in-depth exploration of languages certainly taught words, phrases, and songs and more abstractly showed that our world is filled with different languages and that language is a fundamental part of the human experience. Most importantly, though, it helped us create an inclusive environment: instead of feeling self-conscious or wary of the languages that make up our classroom community, we learned to appreciate the differences and learn from each other.

Last fall, a Korean-speaking woman was one of the parents struggling with her child’s reluctance to separate. This spring, the same woman, smiling ear to ear, sat on the floor with the children and joined in a song that was likely a part of her own childhood. Her face said how far we all had come.

Chinese characters for sky, rain, people and earth. by Christopher S., age 5
RACHEL B.: Mommy had Nicole in her tummy. I couldn’t sit on her lap. She was in the hospital. I had to sit on Daddy’s lap. Mom was not there in the night.

CHLOE: Does Jordan mind if the baby cries?

JORDAN: Not at night, but in the day I check on him.

WILLIAM: Babies come from cradles. The mom picks them up and puts them there.

ANTONIO: I’m going to have a baby boy.

BY the end of fall quarter it became clear that Center AM was going to have an unusually high number of births (eight) during our school year, including Teacher Rinna’s. Children’s natural curiosity was stimulated, and questions emerged in small-group discussions at snack, during work with materials, or when reading books about babies. What do babies eat? Does Rinna’s baby do the hokey pokey when she does the dance during music? Do babies come from the hospital or “from bodies,” as one child stated? These kinds of questions guided the spring project on babies.

The initial discussions helped uncover children’s present ideas about what babies can and cannot do. “They go poopie in their diapers.” “They hold on to their mommies.” “They can’t reach up high.” “Sometimes they let something fall that they had.” The children’s conversations revealed the importance for them of clearly differentiating the category of “baby” from their older selves. Capitalizing on the interest in what babies can’t do, Teacher Betsy Koning helped the children record their ideas about what babies can do and what children can do. She compiled these ideas into a book. It is interesting to note that, for all the discussions about what babies cannot do, when looking at their own baby pictures and the baby pictures of others, they relayed fond stories such as, “I said ‘Dada.’ That means daddy for babies.” “Vanessa goes in the stroller…but so do I!” “When I was a baby, I was little and cute.”

Various activities gave children hands-on, concrete ways to explore babies. Teacher Pam Criostomo used unifix cubes to explore, record, and contrast the different lengths of the babies born in our class. Parent experts came in with real babies to observe: Nandini Bhattacharjya, a teacher from Center PM, with Anika, Hayley Gans with Aidan, and Helen Werdegar with Zakary. Interested children were able to hold a real baby in their arms, watch while a baby had his or her diaper and outfit changed, stroll a baby in the yard, and see how babies practice keeping their heads up. The parents answered questions such as “Why do babies cry?” “Is that [baby sling] heavy to hold?” “How do babies hold on so they don’t fall when mommies carry them?” “Why is he losing his hair?” Zakary obliged us by sleeping through a session in which the children studied his tiny toes and fingers and then translated their observations into drawings.

Seamus Robinson, Myles’s new brother, gurgled through his bath in one of the small rooms adjoining the classroom. His mother, Joanna, showed how she shampoos his hair, washes and dries him, and massages him. The children covered Seamus with a washcloth “because that keeps him nice and warm.” Jordan noted that he thinks his baby brother likes baths because “he rarely cries.” Seeing the large sponge that Seamus lies on in his tub, Julia observed, “I know why he needs this…because he can’t float on his back!” Once Seamus was dressed and nursing, the children used his tub to wash and shampoo their own dolls, not just “playing” but further reflecting on what they had just seen.

The Center AM children proved curious, too, about what babies can eat. “They eat milk for breakfast, lunch, and dinner.” “Only potatoes…mashed-up potatoes.” “They drink milk from their moms when they can’t drink from a bottle.” “Do babies eat lots of food? How does the baby drink all the food?” The children taste-tested samples of baby food to discover the most popular one. For some, the invitation to put “mushy food” in their mouths seemed to challenge their sense of who they had become: “I don’t eat baby food. I’m NOT a baby anymore.”

Eventually, we made our own applesauce and tested it against commercial baby applesauce. Visiting with his mother, Tina, John Semba had a midmorning snack of both kinds and seemed to find both delicious. John also gave a lesson in communication by turning his head away and sealing his lips when he had had enough. While watching John eat, one child posed a pressing preschool question: “How does John eat his birthday cake?” Tina answered, “I break it into tiny pieces or give him a little icing.”

The baby project reached into other areas as well. Much of what the children learned was played out in our yard and in our dramatic play area with relevant props. Team member Jeremy Smart stretched his new guitar skills by writing original baby songs for us to sing.

Parents Amy Oro and Carol Somersille shared information about their jobs as a pediatrician and an obstetrician. In the culminating event of the project, small groups of children took the “sibling tour” of the maternity area at the Lucile Packard Children’s Hospital to research what happens in the hospital when a baby is born. The entire baby project gave the children a chance to explore questions of importance to them. They brought their parents and teachers along on a rich journey of discovery.
Hey! The longer it is, the higher it goes!” yells Zack as he excitedly launches another foam ball skyward above the sand pool with his plank and hollow-block catapult.

Or, put another way: “Given a constant downward force applied to one end of a lever, the amount of upward force imparted to an object on the opposite end increases with that end’s distance from the fulcrum.”

Just as Galileo did four centuries before, the children in West AM discovered the rules that govern the physical world—not through books or answers given by others, but through careful observation and repeated experimentation. As they spontaneously constructed ramps, catapults, pipes, and bucket-lifters out of the materials available in the classroom, they were exploring the physics of simple machines (pulleys, levers, inclined planes, wheels) that help move things from one place to another.

One experiment involved a pile of sand and a shovel laid across it with some sand sprinkled across the digging end. One child placed his feet carefully on the handle and jumped, creating a shower of sand. “We’re making a jumping sand machine.” Children thought of variations: “Let’s make it bigger.” “Let’s put water in the hole.” “Put a ball on the shovel.” “It’s a ball machine now.” Later that week the ball machine moved indoors, using unit blocks instead of a pile of sand and a shovel. The experimentation continued.

Back outside, these ball machines continued to be on children’s minds. A child tried to convert a long metal ramp in the sand into a variation of the unit block machine. When a teacher suggested hollow blocks and wooden planks as a safer alternative, children launched into a three-day investigation of the properties of these catapults. Their aim was to find an arrangement to get the ball to fly as high as possible. They worked on variations of ball type, stepping technique and height, and fulcrum placement.

As balls soared through the air, children also are thinking about how to move water from one place to another. When a teacher moved the water gutters from their usual venue of the sand pool to the top of the Back 40 boat, children were confronted with the problem of how to get the water to the top of the guttering. Buckets filled with water from a tub on the ground were hoisted on ropes to the upper deck. Children spontaneously organized themselves into jobs of water filler, rope puller, water pourer, gutter aimer. They collaborated and shared ideas: rather than hand-over-hand, “Put the rope over the bar and then pull!”

A teacher introduced variations on the gutters on the boat using irrigation pipes and garden hoses. Children were interested, but it was difficult for them to see what happened to the water after it was poured into an opaque pipe or hose. The water-moving machine was moved to the patio, where a variety of transparent hoses and gutters and colored water allowed children to try the effects of adding water and manipulating hose arrangements.

Children were also interested in using gutters as ramps to explore the properties of balls and the wheels of toy cars. Teachers moved the gutters to the black top so that children could compare the effects of ramp angle and object rolled on distance traveled. But the children were less interested in tracking the travel than in averting wrecks: the car “keeps turning over and landing on its back.” One child had the idea to make a ramp at the end of the guttering so that the car could travel along it and not crash at the bottom. The conclusion: “It only goes down there. It didn’t work.”

However, setbacks were often the seeds of new ideas. Children then became very interested in using the unit blocks to stop the balls at the bottom of the ramp. Developing their ideas, they made “traps” to catch the balls. “I am going to put this triangle block here so that it knocks this one over. If I put two of these blocks here, this one can stay on top. It’s a tunnel for the ball.” “The ball bounced over the blocks! I want the ball to knock it right down!” Soon the investigation turned to varying the speed and type of ball and the arrangement of unit blocks so that the entire structure could be demolished in one roll.
What We Can All Learn from Reggio Emilia
By Tom Limbert, Head Teacher

Even before our plane landed on Italian soil, we felt grateful and fortunate. We knew that not everyone involved in early childhood education works for a school that values professional development enough and has the resources to send three staff members to northern Italy to be a part of the Spring Study Tour of Reggio Emilia. I had been reading and hearing about the schools of Reggio Emilia since the early 1990s and was eager and curious to see what made these schools so special. It did not take long for me to realize why these schools are such a topic of conversation among early childhood educators around the world. On the very first day of the conference, we watched a video that opened with the line, “We invest heavily in our children.” I was shocked to hear invest, a word heard a lot in our society, used in the same sentence as the word children. Our journey was underway.

At the opening meeting of the conference, we were all surprised by the graciousness and humility of our hosts as they told the two hundred attendees not to try duplicating their schools or their experience. Instead, they hoped a week of presentations and visits to schools would show that when people work together, for and with children, they can achieve wonderful results. Coming from Bing and having worked at other laboratory nursery schools, I was aware of this phenomenon. But the difference in Reggio Emilia is the involvement and commitment of the entire community in its schools and its children.

The first school in Reggio Emilia was built brick by brick from the rubble of World War II. Then in the early 1960s, the women’s movement played a great role in expanding the school system because women wanting to join the workforce demanded that the local government help build quality schools for their children. The network of early childhood educational services directly operated by the municipality of Reggio Emilia now includes twenty-one scuole dell’infanzia (preschools) and thirteen nidi (infant-toddler centers). From the beginning, these schools have been concerned with the rights of children, and their philosophies and practices are guided by the belief in the enormous potential of children.

Our weeklong study tour included visiting the schools and attending presentations conducted by teachers and other members of the Reggio Emilia school network. The careful design of each school is particularly impressive: not a simple afterthought of the pressing need for schools, each design reflects the collaboration of teachers and architects to build the best possible spaces for children to learn in. For instance, most schools have a piazza in the center for children to meet with friends, reflecting the emphasis on collaboration, dialogue, and community. As I traveled from floor to floor in the warm and inviting schools and felt the warmth and invitation that each school emitted, I thought of back home where we throw a modular building down if we need more space for our children to learn in.

The week’s presentations were uniformly inspiring, informational, and thought-provoking. Again and again throughout the week, speakers stressed the importance of dialogue and collaboration—collaboration among teachers, among children, among teachers and parents, among parents and the community. Presentations of classroom projects focused on this collaboration and also on the respect the teachers give to the children’s ideas. When a classroom of five-year-olds expressed interest in the climbing plants that hang from a large wall in the piazza of their school, the teachers helped channel the interest into an extended study of the plants. After recording a conversation in which the children discussed the possibility of drawing a replicate mural of the hanging plants, the teachers provided a huge piece of paper for the children to work with. The children also made a clay representation of the hanging vines that was then fired in a kiln, painted by the children, and now shares wall space with real plants.

In the most exciting presentation, fittingly on the last day of the study tour, Giovanni Piazza discussed...
“Extraordinary Encounters Between Children and Computers.” We saw pictures and heard stories of five-year-old children doing wonderfully creative projects with computers, scanners, and other modern technology—not alone, but in small groups. Though working with children for nearly thirty years, Piazza told of the children’s endeavors with admirable passion and child-like enthusiasm. He acknowledged the controversy surrounding young children and computers but explained that he trusts the children’s instincts and ideas when they are simply allowed to explore the technology that is an undeniable part of their world. The teacher or the parent is no longer the person who knows, Piazza reminded us, and accepting this idea requires adults to enter into a life-long learning process.

Children as teachers and teachers as learners: this idea was reiterated throughout the week and will stay with me throughout my life and career working with young children. As teachers, we are researchers whose subjects are children: we learn from them as much as they learn from us. It is a powerful reversal of the formula we were given as children, and it is an exciting and dynamic way to look at a profession that is not always regarded highly in our society. In Reggio Emilia, children are truly valued and respected and people collaborate with the children’s best interests always in mind. At Bing, it is true, we are fortunate to find ourselves in a similar environment of respecting and valuing the rights and potential of children. Just think what our society would be like if that environment were universal.

Two Hatchlings

During spring quarter, the children in East room welcomed two hatchlings and watched them grow. The children painted and drew pictures. They recorded the chicks’ growth daily. Some designed a chicken coop.

Designing a Coop

The children made various efforts to design a coop or hen house. They made drawings and paintings and participated in conversations about the necessary elements for this construction.

Charlotte, while describing her first drawing, made the following suggestions:
- **Pointed roof**—so it can’t make a puddle.
- **Wire fencing**—so you can look through.
- **Wood at the bottom**—so they can’t dig under and robbers can’t dig it up.

**CHARLOTTE:** (Describing her second pencil drawing) You know how Buster’s [rabbit] cage has the little squares? That’s what those are. (Points on the roof) That’s for decoration and to catch rain. There’s supposed to be wood under it. And it needs a lock like Buster’s cage. I believe that’s why no one has gotten stolen.

The following discussion occurred at the beginning of snack time, as children drew pencil drawings.

**RYAN:** (while drawing) I’m making sure that a raccoon doesn’t get in.

**LENA:** Put an electric fence around it.

**OLIVER:** A high wall.

**LENA:** We can lock the coop up. (While drawing) See, I put a roof.

**TEACHER:** Why does it need a roof?

**ERIC:** Because the raccoons can jump in.

—documented by Adrienne Gelpi Lomangino, Head Teacher
This past March more than twenty Bing staff members traveled to San Diego for the annual conference of the California Association for the Education of Young Children. In three days we attended sessions on topics as diverse as discipline and play, and several Bing teachers led presentations themselves.

The nonprofit CAEYC, founded in 1953, aims to serve the needs and rights of children from birth to age eight, primarily by providing educational services and resources to adults working with young children. A vital political and professional advocate in the state of California, the organization encourages the study of children, the improvement of their education and well-being, and the education and professional development of their teachers.

To this admittedly biased attendee, the highlights of the conference were the presentations led by Bing teachers (see next page). But a number of other sessions were also intriguing and dynamic. Bev Bos, a teacher and director of the Roseville Community School for over thirty years, asked “How Do Our Children Grow?” in a workshop presented with her son-in-law, Michael Leeman. Well known for making children the center of their own learning experiences, Bos stressed the importance of a natural, “brain compatible” environment for children to play in—plenty of water, sand, gardening, uneven surfaces; tools the children can use to discover, explore, and manipulate; and provisions for both visual learners and hands-on learners. Bos almost seemed to be describing the Bing environment, where children have a sense of belonging as well as rich surroundings in which to wonder, explore, discover, and experience.

Also directly relevant to education at Bing was the session “Understanding Child Discipline in Diverse Cultures.” The presenters—Judith Bernhard of Ryerson Polytechnic University in Canada, Lillian Hensel-Wrinkle of Storyteller Children’s Center in Santa Barbara, and Diana Ballesteros of Sisco Family Center—explained that the “norm” of discipline in the United States is far from universal. Giving examples of disciplinary approaches in other cultures, the presenters showed how discipline, like all other aspects of child development, is inseparable from family values and larger cultural norms. When working with children from diverse cultural backgrounds, teachers need to talk with parents about their conception of their parenting role and their approach to discipline. Such dialogue enables teachers to meet families’ needs no matter what their cultural backgrounds are.

In another workshop emphasizing cultural diversity, participants brainstormed how adults can break out of their familiar cultural perspectives. In “Play as Practice for Paradox,” Janet Gonzales-Mena, an early childhood consultant, and Elizabeth Jones of Pacific Oaks College reminded participants that children may resolve a conflict through “pretend” play, switching their frames of reference, gaining control by sharing it in the “pretend” realm, and thus removing the conflict. Similarly, adults can develop strategies for tolerating ambiguity and assuming the alternative frames of reference needed for problem solving, such as preventing the dominant culture from dominating in cross-cultural encounters. One participant suggested thinking of potential conflict situations as Venn diagrams in which people or groups have many differences but also share at least one characteristic. Focusing on the shared characteristics instead of the differences emphasizes the positive reasons for coming together and can lead effectively to compromise.

As in years past, the CAEYC conference provided attendees with many opportunities to discover their experiences and ideas. For the Bing participants, the conference broadened our perspectives and reaffirmed that our teaching does indeed enrich the children’s lives.
In-Depth Investigations: Indoors, Outdoors, and in the Community

Three classroom projects demonstrate Bing's emergent curriculum, in which teachers take the lead from children's interests and then involve parents and members of the community.

Tom Limbert and Nandini Bhattacharjya described Center PM’s clothing project, which arose after the children watched a girl cut out a paper dress and tape it to her self-portrait. Parents talked about what they wore to work, one family brought in a sewing machine, another displayed a baby’s clothing, and another brought in socks to sort by color, size, and shape. Workers in a fabric boutique demonstrated a spinning wheel and a loom.

As Mark Mabry and Jane Farish explained, “All About the West Room Hens” started when West AM’s hens laid their first egg. The children explored what one could do with an egg and researched hens: Can hens fly? Do they have ears? An expert from the community brought in another type of hen for the children to see and compare with their own hens. Finally the class made a book about hens for the children to take home.

Jennifer Winters and Carolee Fucigna began East AM’s project on experiencing art with the idea that children can benefit from art not only by creating it but also by encountering it. The children rode Stanford’s Marguerite bus to visit the Rodin Sculpture Garden on campus. There they circled, stared at, and even climbed the sculptures to explore size, shape, texture, and action. At the garden the children worked with clay, and back in the classroom many took more care with representation in clay. In the yard they played freeze tag in apparent imitation of the sculptures. Art, the children learned, can be experienced in many ways.

Performing Stories with the Language of Music

Kitti Pecka and Nandini Bhattacharjya led an inspiring workshop on music in the nursery school curriculum. Kitti first stressed that early exposure to music not only builds the musical intelligence of children but also introduces them to language and poetry of superior quality, links the right and left sides of the brain, enhances mathematical and spatial intelligence, and contributes to overall academic performance. Nandini then showed video clips and slides demonstrating how the environment can be set up to encourage children’s musical participation, whether making drums for use in a singing parade or exploring instruments laid out on carpet squares and then incorporating the instruments into a book or flannel board story or song. Finally, Kitti invited workshop participants to use instruments as children would, to make animal sounds throughout a reading of Play with Me by Marie Ets.

Exploring Found Materials with Young Children

In an interactive session, Nancy Howe, Jennifer Winters, Parul Roy, and Betsy Koning involved participants in learning about and working with paper tubes, buttons, ribbons, scraps of fabric, and other everyday objects. Video clips and slides showed children’s enthusiastic discovery of new uses for everyday objects, from props for block building or dramatic play to elements for collage and woodworking to seed ideas for stories. Provided with a bag of found materials, each participant then had a chance to experience the objects’ potential for manipulation and creativity.

Reflecting upon and Responding to Challenging Play

Mark Mabry and Carolee Fucigna explored children’s play that teachers tend to find challenging, such as play that is rough and tumble, dominated, exclusionary, or gun centered. Teachers view certain types of play as challenging for various reasons, ranging from their own cultural values to concerns for classroom safety, the tone of the group, or the feelings of individual children. When responding to challenging play, teachers need to understand their own reactions but also to look closely at the children’s intentions. Many times children engaged in challenging play seek to feel powerful. With this knowledge, teachers can provide other options for addressing this need, such as blockbuilding, digging, and other activities involving large muscle movement.

The CAEYC conference offered dynamic presentations by four groups of Bing teachers.

East AM children visited a sculpture designed by Maya Lin on the Stanford campus. Intrigued by the water trickling down the sundial inspired sculpture, the children watched intently.
I n November 2000, I and five other staff attended the annual conference of the National Association for the Education of Young Children held in Atlanta, Georgia. On returning to Bing, I fielded many questions from parents and colleagues about the conference events and about the sponsoring organization.

The NAEYC is the nation’s largest and most influential organization of early childhood educators and others dedicated to improving the quality of programs for children from birth through third grade. The group’s membership includes teachers, childcare providers, college faculty, and public policy makers. As a professional organization, the association is also committed to professional development for teachers. The annual conference has become the largest educational conference in North America; in 2000, over 30,000 people attended to take advantage of eye-catching exhibits, stimulating workshops and speakers, and opportunities for networking.

The hardest thing about the conference for me was choosing from the myriad of interesting and informative sessions offered in the program. The conference sessions were divided into strands, so attendees could either choose a special focus or take a broad approach. The wide-ranging strands included administration, at-risk children, curriculum, family support, and research and technology.

At the first seminar I attended, “Negotiating Cultural Conflicts,” Louise Derman-Sparks of Pacific Oaks College discussed culture, traditions, identity, and integrating diverse perspectives into early childhood programs. She and a panel of her colleagues explored how cultural values affect the classroom and how teachers affect and deal with cultural conflict in the classroom. Teachers, Derman-Sparks said, must identify culture in everything they do and must always keep open the lines of communication with children’s families.

Evening sessions, typically longer, allowed participants to engage in more in-depth discussions. The first night, I attended “The Play Experience—A Source of Wisdom and Healing,” which offered a hands-on play experience with recycled materials. The workshop facilitators—including Walter Drew, well known for his small wooden building units, and Elizabeth Jones of Pacific Oaks College—encouraged participants to relate the play experience to basic developmental needs such as self-expression, social competence, and creative problem solving. We participants could see the importance of observing and listening to children as a way of helping them to experience play as a source of healing. We were also encouraged to do something already firmly a part of Bing’s curriculum: use recycled materials for play.

The next morning I toured the exhibition hall, looking at the displays by Teacher’s College Press, Bank Street College of Education, ERIC Clearinghouse, and other publishers of books for teachers, along with the exhibits by Lego, Community Playthings, Great Explorations in Math and Science, and other makers of play and learning materials used in Bing classrooms. Then I spent the afternoon at a session on mixed-age grouping in early childhood settings and how it affects children’s play. Lynn Gehrke of Concordia University spoke about cooperation as the hallmark of mixed-age classrooms like those at Bing. Though some critics of mixed-age classrooms express concerns that older children are some-how held back by younger children, Gehrke found that the older children model for and mentor the younger ones, learn empathy and social skills, gain in confidence, appreciate their own development, and cooperate better.

That night, all of the Bing attendees gathered for “The Project Approach: An Evening of Shared Knowledge.” Lillian Katz and Sylvia Chard, authors of The Project Approach, led the session. In opening, Chard, from the University of Alberta, asserted that project work provides children with a “research” work culture and allows them to pose their own questions, instead of always following teacher-directed themes. Participants then rotated among four mini-sessions, including Mark Mabry and Jane Farish’s presentation, “All About the West Room Hens.” In all, the session presented project work of all sizes and scopes and provided a good opportunity to learn about the project approach in every venue from teacher education to a classroom of two-year-olds. Lillian Katz of the University of Illinois noted in her closing remarks that project work was excellent for social development and quoted from Jane and Mark’s presentation:

From the “crystallizing moment” of discovering the first egg, the children were talking to each other, discussing ideas, and working carefully. We noted them developing analytical skills and observed the value of
observational drawing as a tool for children’s research and reflection.

On the final day of the conference, I and several Bing teachers attended a series of seminars. One, “Contemporary and Emerging Issues in Children’s Play,” discussed different theories as lenses on, or ways to examine, play. To use theory, one must find the right lens to understand children’s play experiences. Once they are understood, adults can take different approaches to help facilitate children’s play.

Another seminar, “Ordinary Moments, Extraordinary Possibilities,” gave us an additional look at project work. George Forman of the University of Massachusetts referred to a project as a “string of ordinary moments.” Forman explained that children can have profound experiences revisiting ordinary moments and talking about extraordinary ways of doing and thinking about things. Inspired, the Bing delegation went on to discuss how our project work involves the children in investigations of significant events and phenomena in their own environments, providing multiple contexts in which children can apply their developing social, literacy, and numeracy skills.

I left Atlanta exhausted but inspired, my head percolating with ideas. I returned to the children and families of Bing revamped, refreshed, and ready to use the wealth of information I had learned in Atlanta.

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**Visitors from Abroad**

Director Jeanne Lepper with a group of early childhood educators from Taiwan visiting Bing in January.

Assistant Director Beverley Hartman with visiting faculty members from Seoul Women’s University.

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**Kindergarten Information Night**

**Making an Informed Decision for Your Child**

By Peckie Peters, Teacher

![Rick Lloyd, M.D.](image)

Parents at Bing have the help of the annual Kindergarten Information Night, held this year in January. Those who attended were immediately put at ease by Rick Lloyd, M.D., a local pediatrician and father of five, and Ellen St. Amand, a kindergarten teacher in the Los Altos School District.

Dr. Lloyd gave parents an overview of what to expect from a five-year-old child and some valuable recommendations about how to approach this phase of parenting, including kindergarten readiness. Five-year-olds, he said, tend to be a delight. They want to be “good” in parents’ eyes and tend to look on the good side of life, often exclaiming, “I just love ___!” The best thing parents can do in return is to ensure that their children feel loved and that they feel competent. Their mothers are still the center of their universe, although they are beginning to distance themselves a bit and need some autonomy. This is a good time to give them responsibility at home so that they see themselves as part of a mutually obliged system to which they can make a valuable contribution. Their play may become more competitive because of a need to feel competent, but parents need to guard against making children feel that they have to be the best at everything or that they will be appreciated only if they are successful.

Magic is very real to five-year-olds, Dr. Lloyd explained, because they still don’t distinguish well between fantasy and reality. This characteristic can create magic for parents who encourage and participate in children’s imaginings, but it also has relevance for children’s enter-
tainment, particularly for the violence they see on television or in movies. Research has demonstrated that, unfortunately, children who observe more violence also demonstrate more aggressive behavior, so parents should be cautious about what children are exposed to.

Five-year-olds have physiological needs, too, Dr. Lloyd reminded parents. They usually have strong food preferences, so they need simple choices and may need encouragement to consume a healthy, well-balanced diet. A good night’s sleep is crucial, too: the average five-year-old needs around eleven hours, and parents may have to rearrange their schedules to ensure that their children get sufficient sleep. Toileting should no longer be an issue, although bedwetting may still occur, more often with boys than with girls.

Dr. Lloyd detailed his focus to three major pressures faced by children at this age: academic achievement, the miniaturization of adulthood, and separation. As an example of the first stress, parents sometimes push their children to be early readers. But reading is developmental just as walking is: children come to these skills at different paces. By age three most children are walking and by the end of the primary grades most are reading; those who walk early are not more likely to be athletes and those who read early are not more likely to be academically successful. Children need to be regarded for who they are, not for what they achieve.

Children need similar individual attention when facing the other two stresses. Our culture increasingly pressures children to become miniature adults in everything from the worries they have to the clothes they wear, but they need to enjoy childhood. And people’s extreme mobility often deprives children of the support systems that extended family used to provide, so other sources of support need to be established.

As for the burning question of whether to send a five-year-old to kindergarten, Dr. Lloyd encouraged parents to trust their own instincts but also suggested consulting the child’s teachers and, if necessary, obtaining a half-hour assessment from the Children’s Health Council. Much of parents’ hesitation about kindergarten may stem from the widely held belief that it is better to hold back children, especially boys, to give them “an edge.” It is true that some children who need to “settle” a bit can benefit from additional time in preschool, especially from a transition like the “Young Fives” program offered in the Palo Alto Unified School District. But generally the urge to hold children back may owe more to the competitive society in which we live than to reality; interestingly, more children are held back in the Silicon Valley than in any other area of the country.

Ellen St. Amand joined in to share her experiences as a kindergarten teacher, agreeing with Dr. Lloyd that “Young Fives” programs can be beneficial except that children may feel disappointed not to stay with peers going on to kindergarten. Being the oldest in a class or being the youngest each has its disadvantages, especially when children reach middle school. While a child’s physical size may have some relevance in terms of developmental readiness, it alone should not be a deciding factor in holding a child back. The deciding factor should be the parents’ own sense of the child.

Ms. St. Amand recommended that parents prepare their child for kindergarten by starting to talk about it months in advance and, if possible, visiting the school. Whatever the schedule, get the child used to it during the month before school opens but still expect that the child will be tired for the first few weeks of adjustment. In choosing a particular program, the length of the kindergarten day should be less a factor than what is required in the classroom. If a morning or afternoon session is offered, the choice should depend on the child’s rhythms and activities.

Although kindergarten is still a time of play and socialization, most programs do have expectations for children’s academic knowledge on exiting kindergarten—for instance, they should be able to recognize and name the numerals 1 to 30, recognize the letters and their sounds, and understand concepts of print. Parents should work with children on whatever interests the children, though Ms. St. Amand and Dr. Lloyd both stressed that reading should be a frequent activity.

Excerpt from James F.’s book of favorite words.
by James F., age 4

This is the shape of a shell.
—William B., age 3
Bing Fair Memories
Compiled by Nancy Verdtzabella, Teacher, with West PM children

I remember I had fun there. I played this fun thing like a see-saw. You put a toy soft animal on the side and you bang this big thing on the other side and get it in the bucket. I did an obstacle course! And I got a badge for doing so well on the obstacle course.—Jesse

I painted cookies and ate it all up. And I won two trophies. And my mom was working somewhere [at the fair] and my dad was with me all the time.—Emmett

I made a cookie. And I played with water.—Justin

I was painting and I made a bag. I put stickers and write on it.—Tiana

I did fishing two times. I was in the parade. I danced. I played games. I even did a streamer. You gotta put the streamer on the stick and use tape. And at the Bing Fair I got prizes! I remember goldfish and stickers!.—Courtney

At the Bing Fair there was a fire engine. It was not a real one. I saw Talbott, and I saw a sand pile and trucks and I saw all sort of things.—Erik

I remember everything! Making wands, decorating cookies, painting a picture, getting free stars from the ducks. And I also got prizes.—Rhea

My mom was working at the Bing Fair shuck where you eat. I remember that I was winning a race. I was fishing but not really.—Steven

I did the teddy bear toss. I did the duck pond. I saw Callie when we were getting food.—Daniela

I did the obstacle course, the teddy bear toss, the easel painting. I made the cookies. I did the clown thingee where you toss the ball. Is it called Toss the Ball to the Clown? Quinn [sister] was doing it. I watched the chicks and the puppet show.—Callie
The lady who read us a story,” as one child called her, is Mrs. Helen Bing, a longtime friend of the Bing Nursery School community. Bing’s children had an opportunity to meet Helen Bing as she kindly read a story to an overflowing crowd of families on September 28, 2000. A pleasant evening that started with music by harpist David Palovich and refreshments culminated with the reading.

Mrs. Bing’s husband, Dr. Peter Bing, and his mother Anna Bing Arnold, gave the gift matching a National Science Foundation grant that allowed the laboratory school to be built. Over the years, Helen and Peter Bing have continued to be important supporters of the school, and Mrs. Bing has enhanced this wonderful learning environment with specially chosen children’s books that have made our library collection a treasure. Her deep interest in art is reflected in the beautifully illustrated books, as is her ear for the language and song that so enrich young children.

The story Mrs. Bing read in September is *Mouse Mess* by Linnea Riley, an artist known for her drawings for calendars and greeting cards. The cover of the *Bing Nursery School Cookbook* features an illustration from *Mouse Mess*. Mrs. Bing gave the book to Bing and had offered to bring Linnea Riley to the school to share the book’s delightful pictures and verse. When Ms. Riley could not arrange to come, she suggested that Mrs. Bing read the story. Now the children of Bing Nursery School have come to know this special friend.

**Drummers and Dim Sum and Dragons… Oh, My!**

By Beverley Hartman, Assistant Director

Dragon Kite of the Autumn Moon by Valerie Reddix is the book that inspired this year’s spectacular Harvest Moon Auction. The festive transformation of the entire school into a magical environment, the entertainment, and the incredible dim sum set a party stage for those supporting the auction.

Co-Chairs Milen Tobagi and Dawn Macurdy Billman took the lead and brought together a stellar team of volunteers. Our sincere thank you to each and every one of the Bing community who worked and played to make this event a great success. Again this year, Dr. and Mrs. Peter Bing came forward with a generous gift to support the auction. In addition, Sun Microsystems made a significant gift to the Scholarship Fund. In all, the auctioned garnered $190,000 to benefit the Scholarship Fund for Bing Nursery School.
Bing Nursery School’s
14th Annual
Harvest Moon Auction

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Saturday,
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Bing Nursery School at Stanford University

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