Director’s Column: The Teacher’s Critical Role in Fostering Children’s Development

By Jennifer Winters, Director

“Our basic premise is that the skillful teacher of young children is one who makes ... play possible and helps children keep getting better at it. To do this, the teacher stage-manages, mediates, and may play with beginning players, until their mastery of play frees her to focus her energies on ... play watching.”

–Gretchen Reynolds and Elizabeth Jones, Master Players

Bing is a play-based, child-centered school, born out of John Dewey’s progressive education movement and greatly influenced by Jean Piaget, Maria Montessori, Friedrich Froebel and in later years the work of Lev Vygotsky. At Bing, play is learning, and learning is play, but what is the role of the teacher? Teachers set the stage for learning through play while being keenly aware of how they are supporting each child’s developmental goals. Treating the child as an honored guest guides each and every interaction between the teacher and child—it’s our North Star. Watching the Bing teachers plan and execute activities in their classrooms is like watching a well-choreographed ballet. Each teacher knows their role and how to support the child’s learning through play. The fluidity of the child, the teachers and the environment working together is something beautiful to watch. Like a skilled choreographer, a good teacher is able to set the environment to optimally match the learning goals of children two to five years of age, and then intentionally and actively co-construct the child’s learning.

“Children are capable and competent, full of curiosity, and ripe for making connections. Our job as teachers is to honor them as guests and celebrate the unique individual strengths of each child, and support them with their challenges.” –Bing teacher

Over 25 years ago, prior to being a part of Bing, I witnessed this classroom ballet between teachers and children while conducting an accreditation visit at Bing for the National Association for the Education of Young Children. For two days, I observed classroom after classroom, and one thing was clear: The interactions between the teacher and children were consistently respectful, responsive, unobtrusive and intentional. The school was magical, and clearly the teachers were responsible for creating much of that magic. Has any of this changed in the past 25 years? I am happy to say: not at all. In any classroom, at any time, teachers are engaged and involved in guiding and supporting the play and the development of all of the children. Teachers keenly observe, knowing when to step in and out of the play.

Everyday we open our doors and welcome the children, knowing we (teachers) are there to guide, support and value the play of young children. The tenor of

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the classroom is one of pure joy, there is a sense of belonging, and the play and learning are entwined. Children learn as they play and as they interact with their classmates and teachers (talking, discussing, collaborating, creating, gaining each other's perspectives). The school's beautiful and carefully planned classroom environments beckon the young child to explore, create, construct and discover.

The following example highlights the value of play, strengthened by a teacher who guides the play with questions and comments to support the children's social-emotional development as well as their creative thinking:

Liana (4 years and 5 months), Connor (4 years) and Emma (4 years and 5 months) are playing house outside. “I'll be the mom, you be the daughter and you be the brother, Connor,” Emma announces. The three children begin the process of setting up their play house with pots, pans, pillows and a basket of sticks and other found materials. For 30 minutes, the play is harmonious, with Liana and Connor deferring to Emma for all of the household decisions. Three-year-old Elliott roars up to the house pushing a wooden cart and announces, “I want to play in the house too!” He then proceeds to push himself and his cart completely into the crowded house. The play comes to a screeching halt. Teacher Sam is watching close by and calmly asks, “Is everyone okay in here?” “He just wrecked our house!” says Emma. “Yeah,” chime in Liana and Connor, “We did not like it!” Teacher Sam nods her head up and down, acknowledging everything they say, and adds, “I am sure that it was a surprise when a cart came in your front door!”

Now what can we do? Teacher Sam appeals to the children to come up with a solution to the play disruption. Connor, who has been quietly watching, now speaks up to say, “I don’t like it that he wrecked our house, but maybe next time if he asked us, he can play.” The other two children agree, and then Elliott suggests, “I can be the dog!” The teacher asks a few questions about where the dog would sleep, and would it eat dinner with them, and with that, the play shifts to one of inclusiveness and creativeness. They all agree he would make a great dog, and they go on to create a space for the dog to sleep. This is a great example of four children communicating their understanding of the world and their place in it. There is an order in the play and roles to be played, as well as ideas and solutions to be examined. The teacher was there to support the play and help guide it when it started to disintegrate, but she did so much more—providing an underlying atmosphere of respect for all the children involved, and for their ideas and motives in the play. One of the most important things a teacher can do is respect the
child. With thoughtful verbal (pleasant, responsive and calm voice) and non-verbal messages (smiling, listening and encouraging them to listen to each other, making eye contact), a teacher shows respect for the child, and in turn the child’s self-respect and respect for others grow. Not only does this model good behavior for children, it helps to build a strong and trusting relationship between the teacher and the child that will help the child socially and emotionally as they move on to the elementary years.

The teacher in this vignette was also able to empathize with all the children involved, offering emotional comfort when things disintegrated. There is an underlying feeling that the teacher is there not just to protect them, but to share in their ideas and help with possible solutions to their play.

In the hollow block area, Andrew (4 years) had been building a complex structure, as usual. It was a very small and compact room that he labeled a “dark room.” The room could fit only one child comfortably, yet due to its “pitch dark” quality, many children were attracted to it and wanted to join him inside. Heidi (4 years and 2 months) and Phoebe (4 years) were two girls who anxiously tried to slip in. “No!” Andrew exclaimed, “There’s no room!” Phoebe asked, “Andrew, can I come in?” “No, it’s too small,” Andrew repeated. They argued and struggled with this for a little while. The teacher asked, “Andrew, would you let them in if they could fit?” “Yes, but it is too tight.” “Is there a way that everyone could fit in? Do you have any ideas?” the teacher asked. “We could take turns,” Heidi suggested. “That is a good idea, then everyone would be able to sit inside, right? How can we make it bigger?” said the teacher. Andrew thought for a minute. “We could use big and small boards to make it bigger.” “And we could open the door,” someone else added. “I know, we could build two houses!” Phoebe said. She walked over to the stacked pile and started to build her house next to Andrew’s. After several minutes of building up a wall, she paused and said, “I know! Let’s connect the two houses, then it will be very big!” “Yeah,” some children exclaimed enthusiastically. With each child helping, adjacent walls were erected alongside Andrew’s dark room, and soon his house had what looked like a pen attached to it. The problem, however, was that the wall from Andrew’s house that connected to the pen still stood, and thus the enclosed areas remained small. “So, now you have two areas,” the teacher pointed out, “but it is still too crowded.” “Well,” Andrew said, “We could just take this off.” He then pulled away two of the larger blocks that formed the wall, and thus created a large doorway/opening. The children were then all able to play in the new “hide-out,” and no one was excluded due to lack of space.

This anecdote is a good example that we frequently see with young children. They often only see one solution to a problem—part of being egocentric at this age. In this case, they felt that there is no room—and that is the way it has to be, because the structure is already built. Here the value of having an attentive teacher who can offer a few suggestions is evident—things can be changed, added to or rebuilt. In this case, the teacher stretched the children’s social and problem-solving cognition, getting them to think about what is possible. With only a few questions, the teacher was able to help the children turn a tiny “dark room” into a more spacious and inclusive “hide-out.”

At Bing, we view young children as competent, curious and creative human beings who, through play and with the support of highly trained teachers, are able to grow and develop in all the developmental domains—social, emotional, cognitive and physical. Our founding director always said, “We [teachers] must have faith, hope and trust in the child.” Those words ring as true today as they did in 1966 for all of us at Bing.

Elinor Fitch Griffin, a clinical psychologist and early childhood educator, said it well in her book Island of Childhood: “A sensitive kind of awareness is necessary for a teacher to meet each child where he or she is—‘big’ one day and smaller the next—while maintaining her faith that the child will surely continue to grow and learn if she does her job of providing the right environment.”

The exceptional teacher sees children in a true competence model—focusing on their strengths and what they can do. The exceptional teacher is able to understand and support the children’s perspective and the intentionality in their play. This, in turn, leads to a trusting relationship where children can thrive and develop the skills and dispositions for a lifetime of learning.

Behind all fluid, well-orchestrated performances, there is an abundance of hard work, dedication and professionalism involved. After 25 years, I can unequivocally say that it is the interactions between teachers and children at Bing that make it so special.
The 2017 Bing Distinguished Lecture, held in East Room on May 11 and titled “Language Acquisition and Expertise,” certainly lived up to its billing. Stanford linguistics professor Eve Clark is one of the world’s leading authorities on how children acquire language. Since coming to Stanford in the early 1970s, Clark acquired much of her own expertise at Bing, and she began her talk by thanking the school’s faculty and families for supporting her research over the years. Bing afterwards honored Clark on the occasion of her retirement with a reception at the Tower House.

In her valedictory Bing lecture, Clark showed how a young child learning to speak, an Olympic athlete and a chess grandmaster depend on similar learning processes to acquire expertise in their respective fields. Clark then followed up her lecture with a Q&A about baby talk, bilingualism and how parents and caregivers can best support their little language learners.

What “expertise” is, and the 10-Year/10,000-Hour Rule for Becoming an Expert

Nobody is born speaking, any more than Serena Williams was born playing Grand Slam tennis. Modern studies show that no matter how much innate talent anyone has, this alone is not enough to develop true mastery. It takes hard work and the right conditions. Whether it is a child learning to speak or a future world champion learning the game of tennis, gaining expertise in any field requires extensive early exposure, immediate feedback from an expert and deliberate practice.

She compared the process by which children learn to speak to the path chess players take to become masters, drawing on the findings of Herbert Simon and William Chase in the 1970s at Carnegie Mellon University. In a 1973 article in American Scientist titled “Skill in Chess,” they stated:

“There are no instant experts in chess—certainly no instant masters or grandmasters. There appears not to be on record any case (including Bobby Fischer) where a person reached grandmaster level with less than about a decade’s intense preoccupation with the game. We would estimate, very roughly, that a master has spent perhaps 10,000 to 50,000 hours staring at chess positions…”

Simon and Chase studied chess because it required no motor skills, but in the 1990s Simon’s student Anders Ericsson began studying what it takes to become an expert in other areas. Ericsson studied skills ranging from sports and music to typing, mathematics and X-ray diagnosis. In all these fields, he found that the learning process was essentially the same.

What is expertise? Clark showed a number of examples of child experts in various fields: 8-year-old Samuel Reshevsky playing a roomful of bearded chess masters in Paris in 1920; 14-year-old Nadia Comaneci scoring a perfect 10 in the 1976 Montreal Olympics; 6-year-old violin virtuoso Jascha Heifetz in 1907; and a 4-year-old dinosaur fanatic. A baby learns to talk, she says, in the same way that these other child experts acquire their skills. Expertise, however, is relative. Even the most gifted child prodigies differ from each other and will not attain their full powers until maturity.

And it’s not just any 10,000 hours of practice: Ericsson concluded that to master any domain, intellectual or physical, the type of practice itself mattered as much as the amount of time spent practicing.

Expertise: A Five-Step Program

So how should those 10,000 hours be spent?

Clark showed that, just as in chess, expertise in language requires:

• Guided exposure: Listening to adult speech from birth is the Suzuki method of early language acquisition.

• Immediate feedback from an expert: When a child makes an error, the adult immediately gives feedback, and the child corrects the error.

• Deliberate practice on one’s own, consciously and frequently: That cute baby babble is actually serious work.

• Monitoring of performance: Children have to become conscious of their own errors so they can correct them on their own.

• Extended immersion: Passion for a subject makes for greater expertise.

Engaged Early Language Exposure

The type and timing of linguistic exposure is essential for success. The more engaged speech directed to a child in the first years of life, the better the outcome. Overheard conversation, watching TV
and other passive auditory stimulation simply don’t cut it. What counts is an adult speaking directly with the child before the age of 4. Children who hear more child-directed speech by 19 months can recognize familiar words faster than children who have heard less. To illustrate her point about the necessity for engaged, child-directed speech, Clark cited a fascinating case of a hearing child of deaf parents. The parents had had their child watch TV in an attempt to teach him spoken language, but at age 3, the child could produce only ad jingles. But after a year of intensive one-on-one language interaction with an adult at preschool, the child began to catch up with his peers.

Socioeconomic factors play a big role in the quality of this critical early exposure. For example, a 1995 study by Betty Hart and Todd Risley showed that the number of words spoken per hour to a child varies enormously with the parents’ socioeconomic status, with higher status parents talking more to their children. A follow-up study showed that greater engaged exposure at the age of 3 predicted greater verbal ability at age 10.

One of the most surprising findings was about day care vs. being cared for at home. Parents are often concerned about having young children in day care, but studies show that, at least when it comes to acquiring language, children cared for outside the home may have an advantage. After one year, children in day care had greater vocabulary and sentence complexity than children at home, possibly because they had more practice as a result of explaining themselves to caregivers who did not know them well, and then talking about their day to their parents once they got home. However, noted Clark, that this study was carried out in France, where day care must meet strict national standards for adult-child ratios and quality of care.

**Immediate Feedback from an Expert**

Immediate feedback on performance is a critical requirement for developing expertise, and the best feedback is immediate, clear and usable by the child. Like any good coach, adults combine positive and negative feedback in a way that scaffolds the child’s meaning and keeps the conversation going.

Positive feedback expands on what the child is trying to say. For example, when a child says, “Nose,” the parent replies, “He has a pointed nose, doesn’t he?”

When a child makes a mistake, adults rarely stop the conversation to say, “No, that’s wrong.” Most adults reformulate the child’s speech to check that they have understood the child’s meaning (“Do you want me to put this back? There you go.”) or to provide embedded corrections that likewise preserve the flow of conversation. For example, when a child says, “Don’t fall me downstairs!” the parent reassures, “No, I wouldn’t drop you downstairs.”

Clark discusses a scenario where a 1 1/2-year-old, looking at a picture of an owl, says, “Duck, duck.” The mother reformulates by saying that it’s a bird called an owl that goes “hoo, hoo.” The child learns a new category: bird; a new word: owl; and a distinguishing property of owls: hoo, hoo.

Most children’s mistakes involve pronunciation, choosing the right words or using the correct syntax or grammar. When adults reformulate these errors, children will either repeat the corrected form offered by the adult or acknowledge it with an “uh-huh,” though sometimes the child will reject the adult’s interpretation (it’s a misunderstanding) or opt out of the conversation. Clark’s research shows that a high percentage of children’s language errors are reformulated (up to 60 percent at first, decreasing with age as children make fewer and fewer errors).
Deliberate Practice

Does your toddler babble nonstop? Mastering anything takes practice, practice, practice on one’s own, and those bedtime monologues and pretend-play dialogues have a key role in learning to speak. Clark cited studies by Ruth Weir that showed how children intensely rehearse words and role-play speech to themselves and with each other. Children will repeat conversations and combinations over and over, almost like a language lab exercise.

In pretend-play dialogue, children are very sophisticated. In studies by Elaine Andersen, carried out at Bing, children can differentiate roles by making deep voices for males, higher voices for females, and high-pitched baby talk for children, assigning different syntax, accent, status and vocabulary to the different roles. They also differentiate stage directions to their playmates from the main dialogue by putting the directions in the past tense (“I was the mother, you were going to the ball”).

Practice makes perfect.

Monitoring Performance, Making Adjustments

Father: “Where’s Mommy?”
Child: “Mommy goed to the store.”
Father: “Mommy goed to the store?”
Child (annoyed): “NO! Daddy, I say it that way, not you!”

External feedback is essential for developing expertise, but so is the ability to monitor one’s own performance, recognize a mistake and correct it. When children practice speaking, they mentally compare their own utterances with what they have represented in memory for adult versions, and then they try to make any repairs needed in order to match the adult versions as closely as they can. They can tell the difference between how they say things and how an adult does, even if developmentally they can’t yet manage to produce the adult version themselves.

When asked why children who acquire a second language early often have no accent, while adult learners always seem to have one, Clark suggested that something changes in a child’s motor development that affects their ability to make fine adjustments to pronunciation. Although there is no time limit for acquiring another language, there does seem to be a time limit—about the age of 13—for acquiring one without an accent.

Passion and Extended Engagement

By the time they are 2 ½, children are initiating two-thirds of their conversations with adults. By the time they are 4, they are playing word games, clamoring for stories, telling bad jokes and making bad puns. As in any field of skilled performance, the more time spent immersed in the topic with extensive feedback, practice and monitoring, the greater the eventual skill. By the time children are 4, they usually have spent over 10,000 hours practicing language, but they won’t reach adult-like linguistic mastery for a long time: In 10 more years, they will be fairly competent, but even among adults, there is extensive variation in individual linguistic ability.

To get an idea of how immersed a child is in language acquisition, compare the average 3,640 hours a year a preschooler spends practicing a first language with the 180 hours per year averaged by a college student taking a second language in the classroom. A college-level course of one hour a day plus one hour a week in language lab still amounts to only 5 percent of the language immersion and practice a child of 4 has achieved.

Bilingualism

Among the diverse audience in East Room listening to Clark’s talk, the topic of bilingualism was of intense interest. Many parents wonder whether learning a second language from birth will hinder learning the first language. Teachers in progressive, diverse Bay Area schools sometimes still advise parents to avoid introducing a second language too early, but Clark has some counter-advice: Ignore this.

Studies show that up until 30 months, children who are introduced to two languages from birth are just like monolinguals, only doubled. They have vocabularies and speaking abilities comparable to monolingual children of the same age in both languages. They often understand more words in both languages than their monolingual counterparts.

After the age of 30 months, when children start going to outside day care or are exposed to wider social situations, it’s hard to maintain a perfect balance of engaged exposure in both languages. Clark’s message to bilingual parents is that they should continue to speak and read with their children in the home language as much as possible. Children benefit from early engaged exposure to language in any form. Finally, she pointed out that the majority of the world’s population is bilingual or multilingual.
It has become popular because some parents feel it helps children communicate their meaning earlier, and so avoids frustration. I see it as just another form of language, and it should not affect language acquisition one way or another as long as the parent is speaking while giving the sign. As babies acquire spoken words, they generally drop the baby-signs.

When an adult reformulates something for a child, is there a danger of over-correcting the child?

Not really, since most reformulations happen when adults are trying to clarify what a child means or to expand on something they said. Often, adults are not even aware they are offering corrections to the child.

Many parents at your Bing talk expressed concern that their bilingual children might struggle with two languages or suffer in school compared to their English-only peers.

There is a great deal of resistance to bilingualism in this country. An elementary school teacher once told the mother of one of my son's friends that she should not speak Italian to her son to avoid confusing him or hinder his progress in English. I told her to ignore this advice and to keep speaking and reading to him in Italian as much as possible. I nearly went to see the principal to talk about changing this kind of thinking.

Young children, even if they do not speak English well at first, will catch up very quickly without any special preparation once they are immersed in an English-speaking school or preschool where most of the other children speak English. They will be just fine, unless there are unusual circumstances.

Children almost never confuse languages. They know exactly what words and constructions belong to which language. Acquiring two languages at once is not usually a problem, and knowing a second language is an enormous benefit.

Bilingual parents are also concerned that once the child starts school or preschool, English might overwhelm the other target language. Any advice for maintaining a second language?

Young children learn through normal conversation, talking about everyday things with their caregivers and playing with peers, not in language classes. To acquire a second language simultaneously with the first, children often associate a language with a particular person or place. It is important to have a “constant speaker” like a parent or a caregiver who speaks to the child only in the other language, or to have a defined space where that language is spoken. For example, the child knows to speak English at school and only Mandarin at home. It is also important to read in the home language as much as possible. Children are also motivated to learn something if they see that it is relevant in their lives—for instance, when traveling or having visitors from abroad.

True bilingualism, when a person feels equally comfortable in either language, is certainly possible, although a person may not be fully fluent when speaking about a specialized domain (like linguistics) in both languages. Nobody is ever perfectly bilingual on every topic.

Anyone can learn a second language at any time, although adults and children learn language differently. There is no age limit to becoming bilingual, although there is a time limit to sounding like a native speaker. After the age of 10–12, it is highly unlikely that you will avoid having some sort of accent. There is something about the way children monitor adult sounds and fine-tune their own pronunciation that changes or is lost after that age.

What is the most important message you would like to send home with the parents of young children?

Talk with your children, a lot. Listen to your children, a lot. Read with your children, a lot.
Have you ever wondered about the influence of praise on children’s self-esteem? Would you be surprised to know that some praise could be contributing to narcissistic qualities in children instead of encouraging higher self-esteem? In a nuanced and captivating talk during our staff development day in February, developmental psychologist Eddie Brummelman illuminated the differences between narcissism and self-esteem and explained how well-meaning parents might be encouraging narcissism by lavishing their children with praise. Brummelman has a doctorate in developmental psychology from Utrecht University and was a Marie Skłodowska-Curie Fellow at Stanford during the 2016–2017 academic year.

Brummelman opened his talk by describing the self-esteem movement and current attitudes about narcissism, particularly in young people. The self-esteem movement, which came about in the 1970s, is a paradigm in parenting that declares high self-esteem as the core of a child’s ability to do well in life. In Parenting for Dummies, praise is described as doing for self-esteem what water and fertilizer do for a growing plant. According to a recent survey that Brummelman and his colleague conducted in the Netherlands, 87 percent of parents agreed that children need praise to feel good about themselves. As the self-esteem movement grew from the late 1980s to 2006, narcissism levels in US college students were found to have risen dramatically, prompting some psychologists to declare a “narcissism epidemic.” Brummelman, however, does not use the word “epidemic” himself, because narcissism is not a disease: it is a trait that can be changed.

Narcissists believe that they are superior, explained Brummelman, while those with high self-esteem believe that they are worthy. People with high self-esteem are often happy and do not equate their success to their self-worth. On the other hand, narcissists may be unhappy while still maintaining that they are better than others. Narcissistic qualities first start appearing around the age of 7—for example, when a child thinks: “I am better than others”—and they become fully formed during the teenage years. In the classroom, narcissists want to be seen as exceptionally competent, are extrinsically motivated and respond defensively to feedback. Additionally, they will often set themselves up for failure so they’ll have an excuse for falling short of expectations. Narcissists can negatively affect people around them as well, taking credit for group successes or bullying those they perceive as a threat.

Brummelman then dove into possible explanations for increased narcissism in children. He presented two psychological theories that could be applied—the psychoanalytic theory and the social learning theory. The psychoanalytic theory describes narcissism as a defense mechanism: when parents are especially cold, children will seek attention and approval from everyone else. In Brummelman’s research and beyond, this theory has found little support. The social learning theory posits that narcissism is internalized by children whose parents believe that their child is better than other children. This phenomenon is referred to as overvaluation—where parents ascribe every perfection to their child and conceal or forget any shortcomings. Brummelman’s research focused on this theory and how it could relate to increasing rates of narcissism in children.

Brummelman developed the Parental Overvaluation Scale, a questionnaire to determine if parents were overvaluing their children. One study involved parents looking at a long list of historical events, historical figures, world geography and literature, and marking the ones they believed their children knew about. The parents who overvalued their child were found to believe that their children knew about things that didn’t even exist! In another study, Brummelman discovered that overvaluing parents lavished their children with praise: They praised their children about 62 percent more often than other parents did. In other research, he found that 25 percent of all praise could be classified as inflated praise, which sounds like “You did incredibly well!” instead of “You did well!” When children are lavished with inflated praise, they may develop a sense of grandiosity: they may infer that they are incredible.

The last part of Brummelman’s presentation focused on the relationships between overvaluation and narcissism and between warmth and self-esteem. Brummelman found that children who were overvalued by their parents developed higher narcissism levels. This is in line with the social learning theory of narcissism. Perhaps you now find yourself wondering, “How can I support a child’s growing self-esteem?” The answer, said Brummelman, is with warmth. He found that when parents display love, affection, interest and shared joy, children develop higher self-esteem rather than narcissism. Thus, parents’ warmth helps cultivate a healthy sense of worth in their children. Brummelman conducted research at Bing this past year to better understand how parents influence children’s self-worth.
Researcher in Profile: Kara Weisman on Children’s Development of Social Reasoning

By Chia-wa Yeh, Head Teacher and Research Coordinator

C an robots have feelings? Do staplers get hungry? These are some of the questions Stanford researcher Kara Weisman explores with adults and children regarding their understanding of the mental and inner lives of animate and inanimate beings.

Weisman’s interest in the topic can be traced back to her toddlerhood, she says with a smile. One of her parents’ favorite stories about her is how, as a 2-year-old, she walked around for weeks cradling a tiny (perhaps imaginary) speck of dust in her hand. Whenever she had to do something else with her hands, she would ask her parents to take care of the dust speck for her. That was just the beginning of her many inanimate “friends”—from rocks that had names, to bouncy balls that went to “bouncing school,” to many cherished stuffed animals.

Weisman, a doctoral student in developmental psychology at Stanford, grew up with her parents and sister in Lunenburg, Massachusetts. Theirs was a close-knit family, with many relatives within an hour’s drive. She stayed in New England for college, majoring in cognitive science at Yale University, where she also took lots of classes in philosophy, literature and Near Eastern studies. After college, Weisman wanted to see more of the country and worked as a lab manager at the University of Wisconsin in Madison, and later at the University of Virginia Curry School of Education and Harvard University, prior to coming to Stanford to work with professors Ellen Markman and Carol Dweck. She began conducting studies at Bing Nursery School in 2013.

What follows is a recent interview with Weisman about her research.

What is the topic of your studies?

I study how children and adults come to understand things like consciousness, personhood, and what it means to be alive. It sounds pretty philosophical, but it turns out that children spend a lot of time thinking about these kinds of things—for example, thinking about what animals do and how they feel, wondering about the possibility of intelligent robots or aliens. In fact, sometimes I find it easier to talk to preschoolers about these topics than to adults!

Tell us about the studies you’ve conducted at Bing.

In the past year, I’ve been focused on two studies at Bing. About 170 children at Bing have participated in them.

The goal of the first study is to get a sense of children’s intuitions about mental life. When they think about different mental capacities—like emotional experiences, sensory abilities, cognitive skills, bodily sensations—which of these mental capacities seem to them to “go together”? And which kinds of beings in the world have these different mental capacities? To address these questions, I designed a game where the researcher (either me or one of my research assistants) asks the child many different questions about a particular being—for example, “Do you think a mouse can feel happy? Do you think a mouse can see things? Do you think a mouse can remember things? Do you think a mouse can get hungry?” Different children are asked about different beings—robots, beetles, dogs, children, teddy bears—and we’re interested in two things: whether answers to certain questions might cluster together (for instance, if children tend to either say “yes” or “no” to all of the different emotions we ask about), and how answers might vary across different beings. We are playing this game with 4- to 6-year-old children.

The second study is on a related topic: When do children think it is appropriate to say that something can get hungry, or have feelings, or think? In this game, the researcher plays a recording of someone saying a variety of sentences (for example, “Staplers can get hungry,” “Ice cream is very cold,” “Robots have feelings,” “Grownups can think”), and the child’s job is to say whether the sentence is “silly” or “normal.” This spring, children in Center AM and West AM enjoyed the game and were eager to play! We’re playing this game with 3 1/2- to 5 1/2-year-olds.

What are your findings so far? Were any surprising?

In studies with adults and older children (7 to 9 years old), I find that there are three “clusters” of mental capacities: bodily capacities (like hunger and pain), social-emotional capacities (like happiness and embarrassment) and perceptual-cognitive capacities (like seeing and thinking). It’s too early to
tell what 4- to 6-year-old children think about this, as we need more participants—but I’m very curious to find out.

In terms of which mental capacities different beings have, children’s answers to questions about more bodily capacities (like hunger) and perceptual-cognitive capacities (like thinking) look pretty similar to adults’: Humans and other animals are capable of both kinds of things, but technologies (like robots) might only have a few perceptual-cognitive abilities (such as “detecting sounds”), and no bodily abilities. But I was surprised to see that 4- and 5-year-olds (and even 7- to 9-year-olds) seem to attribute quite a lot of social-emotional abilities to beings like robots and beetles—for example, unlike adults, many children say that robots can feel happy or that beetles can feel embarrassed.

Why learn about children’s development of social reasoning?

Thinking about the mental life of others is at the core of so much of our lives. For example, when we decide what is right or wrong and think about how to be a good person, we have to take into account how our actions make other people feel. When we try to help other people, we have to think about what they know and believe, what they are trying to do, and what they are capable of. And when we encounter new kinds of “creatures”—like the many robots, virtual personal assistants and other artificial intelligences that we now live with—we might use our understanding of mental life to make sense of what they are capable of and how we should interact with them.

What are your next steps?

I’m interested in following up on that last finding—trying to figure out what children mean when they say that a robot experiences emotions. How might books, movies and other media influence these judgments? Do children think that robot emotions are just like human emotions, or do they think they differ in some way? Are these kinds of attributions metaphorical (like when an adult says, “My computer hates me!”) or are children truly more open to the idea that inanimate technologies might have an emotional life?

This summer I started to explore the role of cultural context in shaping understandings of mental life. I’m collaborating with anthropology professor Tanya Luhrmann to run studies in Ghana, Thailand, China and Vanuatu. I expect that there will be some things we all have in common, and some things that people think about differently in different contexts—I am so curious to hear what children (and adults) in these different communities have to say about these questions!

Do you have any anecdotes you’d like to share about doing research at Bing?

Sometimes children say things to me that reveal how deeply they’re thinking about the world. For example, recently I was asking a 4-year-old child about the mental capacities of a mouse. When I asked, “Do you think a mouse can remember things?” the child said that a mouse might be able to remember things for just one minute, but then it would forget them unless it was thinking about them the whole time. It took cognitive psychologists a long time to understand this phenomenon!

Other times, children say things that are just so unexpected and funny—one of my greatest pleasures in spending time with preschoolers is their sense of humor. My favorite story is when I was trying out a new game that wasn’t quite perfected yet, and I asked a 4-year-old about whether a dog or a stapler was more likely to have feelings. The child said the stapler, and when I asked her why she thought that, she told me, “I have a brain in my leg, and my leg-brain told me.” It was not quite the explanation I was expecting! But interactions like this help me improve my games and make my time at Bing so fun and memorable.

SELF PORTRAITS WITH CLAY

Left: left to right: By Avy P., 4 years 3 months • I made a clay person. It’s me. Just looking. By Mack L., 4 years 3 months • My hair with a clip. By Jaxi Z., 3 years 10 months

Below, left to right: It’s me with braids. I am in my ballet when it’s summer. By Eloisa V., 3 years 10 months • It’s me. I’m just a sculpture head. By Farrah F., 4 years 4 months • These are the eyes, these are the eyebrows and the nose. By Noemi K., 3 years 7 months • By Briggs F., 4 years 10 months
Building a Classroom Community Through Cooking in the Twos
By Mary Munday, Head Teacher

This past year in the Tuesday/Thursday AM Twos, we discovered the children had a strong interest in cooking. This became apparent one day early in the fall when a teacher set up a table with a large bowl, cooking utensils, a recipe book and the ingredients to make soft bread pretzels. The table filled up quickly with children requesting, “I want a turn! I want a turn!” The teacher gave each of the children a turn to help by scooping flour or salt, mixing yeast with warm water, and stirring the ingredients together. Finally, the dough was ready for rolling, pounding, twisting and shaping for the cooking pan. After all the dough was placed on the pan, the group took a trip to the kitchen, where the teacher carefully placed the pretzels in the oven. They headed back to the classroom and washed the flour and other ingredients off the table and resumed playing. About 10 minutes later, a few returned to the kitchen to pull the warm bread out of the oven for snack time, and the class enjoyed the delicious pretzels at snack time together.

Noticing that the children were fascinated by cooking, the teachers tried a few more recipes over the following weeks. Next we invited families to come in and prepare a favorite recipe they enjoy at home. The sign-ups filled up fast, and soon we were on a weekly cooking adventure with our families. Each week, the table filled up as the children were immediately interested in the process. They joined in to scoop, pour, mix, knead, roll, chop, bake and taste many delicious recipes. The children cut fruit and made a big fruit salad, kneaded dough and covered it with sauce and cheese to make pizza, and made many types of breads. The enthusiastic involvement of children, families and teachers contributed to a shared classroom experience.

Cooking with children presents many learning opportunities. Children explore basic math when scooping and adding ingredients, or counting eggs as they get cracked into the bowl. Their vocabularies are enriched when teachers read the recipe out loud, and their basic reading foundation is strengthened when they see teachers read from left to right and top to bottom. Children get to explore through their senses by smelling the ingredients, pounding the dough, watching bread rise and tasting new flavors. Cooking in the classroom creates a group experience full of turn-taking opportunities as the children work toward a common goal together, passing the bowl around the table to help measure and stir. Cooking can also boost children’s self-confidence as they use real tools to make actual food to share with the group.

The cooking project created a stronger classroom community as families joined us weekly—sometimes coordinating with each other—to work on a recipe for the classroom. Children were excited to have their parent, grandparent or caregiver act as another teacher in the classroom for a day, and teachers looked forward to supporting the families each week. As a culminating project, the team of teachers put together a cookbook to give to all of the families at the end of the school year so that they could make some of their favorite classroom recipes at home.

Finally, the cooking project inspired teachers’ choices of books and songs for the end-of-the-day story time.

Here’s one of the children’s favorite recipes:

**PRETZELS**

**Ingredients:**
1 1/2 cups warm water
1 envelope yeast
4 cups flour
1 teaspoon salt
1 tablespoon sugar
coarse salt
1 egg

**What to do:**
1. Mix together water, yeast and sugar.
2. Set aside for 5 minutes.
3. Put salt and flour in a bowl.
4. Add yeast mixture and mix to form a dough.
5. Shape dough into creative twists.
7. Sprinkle with coarse salt.
8. Bake at 425° F for 12 minutes.

**Chop, chop, chippity chop**
Cut off the bottom
Cut off the top
All of the rest goes into the pot
Chop, chop, chippity chop

Choices of books at story time incorporate themes about cooking:

- *Pete’s a Pizza* by William Steig
- *Bear Wants More* by Karma Wilson
- *Bear Says Thanks* by Karma Wilson
- *Growing Vegetable Soup* by Lois Ehlert
- *The Very Hungry Caterpillar* by Eric Carle
- *Bunny Cakes* by Rosemary Wells
- *Muncha! Muncha! Muncha!* by Candace Fleming
- *Bread, Bread, Bread (Around the World Series)* by Ann Morris
- *If You Give a Pig a Pancake* by Laura Numeroff and Felicia Bond
Play in Stages: Valuing All Types of Play in the Twos
By Colin Johnson, Head Teacher

As important as the things children learn through their play—skills like language or problem-solving—is what children learn about play itself. With practice, they engage more deeply in their exploration of the world, try different ideas and strategies, and gain what are known as “play skills.” In the Monday, Wednesday, Friday AM Twos, teachers have witnessed children playing in a variety of ways and in ever-evolving styles. These styles can also be viewed as stages of play, specifically six stages first outlined in 1929 by sociologist Mildred Parten, who was a researcher at the University of Minnesota’s Institute of Child Development.

The first stage, “unoccupied play,” relates to a child who is not actively playing but observing. In the Twos class, children often engage in unoccupied play as they take in the environment or witness peers’ activity.

The second, “solitary play,” occurs when a child independently focuses on their own activity with little acknowledgment of others. Parents may see this at home, where peers are absent, but it is common at Bing, too. Solitary play can help young children focus on material parts of the world, such as one boy did at the sand table one day. He repeatedly lifted handfuls of sand to eye level, only to release the load and marvel as it blew in the wind and glimmered in the sun.

The third stage, described as “onlooker play,” comprises peer-oriented but inactive behavior, such as observation of or discussions about others’ play. For instance, one child caught sight of others pretending to be scary dinosaurs outside. Though he didn’t join, he watched intently and conversed with a teacher about the game each time a dinosaur roar came across the grass. Then he walked away. Two days later, however, when the boy returned to school, he approached one of those other dinosaurs, growled with raised arms, and said “Dinosaur!” The social game commenced again, as the boy’s onlooker play taught him just the right strategy to join the group later.

The next stages involve activity with others. In “parallel play,” Parten’s fourth stage, children engage in independent work that is physically close to peers and with the same materials. This is distinct from the fifth stage, “associative play,” when a child shows attachment to other players but still little coordina-

Children “cook” alongside each other in parallel play in the sand area.

A child focuses on personal goals in solitary play.

Onlooker play: One child sees new opportunities with materials by observing another.

Climbing together in associative play makes for a clear social connection!

Photo not available online

Finally, “cooperative play” occurs when children coordinate their activity, often around a shared goal, theme or set of rules. It requires a suite of skills including perspective-taking, conversational abilities and planning that can be outside the range of typical toddler development. Still, in class, teachers saw cooperation as two children built a single stack of cardboard boxes, while others negotiated a game of “tag” on the grass.
This final stage can easily be seen as a goal for children in their experience at Bing, and it often is. Teachers work hard to facilitate such complex interaction. However, teachers also value the other stages. In fact, there is some danger in representing play as a series of stages in the first place. For one thing, it suggests a linear track from one to the next, in which children move only forward, like climbing stairs. For another, it implies that any stage is somehow inferior to or simpler than what follows. To make either of these assumptions would be to underestimate the fluidity of children’s development through the play stages and to undermine the utility and complexity of each stage.

Instead, adults can think of play stages as an ever-increasing repertoire of strategies. In that way, it is analogous to language: Humans first learn to speak in one-word utterances, but over time they reach new stages, like combining words, and then clauses, to form complex sentences. They grow capable of speaking in paragraphs, but they don’t always. Sometimes a “simpler” phrase, even a single word, is best for the situation at hand. Likewise, each stage of play has its value for a given situation, based on a child’s motivation, intentions, feelings and competencies.

In the Twos class, teachers have seen children develop through these stages, but also thrive in each one. One child, for instance, worked hard on a block structure: She built a symmetrical design and challenged herself to make it taller. But with the addition of height, it toppled over (and over and over). She tried to rebuild the same structure nine times. It was clear that she had a specific goal and was determined to reach it. Soon, a peer approached and showed interest, helping her add blocks to her structure. She showed him which blocks she preferred, a clear sign that she had the skills to build cooperatively. Still, her face seemed sad, so a teacher checked in: “You were working really hard on that building by yourself. Do you want help, or do you want to try to do it by yourself?” “By myself,” she replied, so the teacher helped the peer work elsewhere. Glancing back, the girl beamed with pride as she took on the challenge she had created for herself in solitary play. This young child was capable of cooperative play. However, her goal was not simply to build the tower, but to build it on her own, and to experience the pride of completing the challenge. In this case, solitary play was called for—and though it was arguably less complex, it was unquestionably more powerful.

Cooperative play: Children take on different roles as they collaborate to build one very tall tower.

What Are They Doing? Early Connections With Peers

By Adrienne Lomangino, Head Teacher

Entering nursery school is a big step into a broader social world outside home. As part of the classroom community, children learn about themselves as individuals and in relation to others. For many, the preschool years mark their introduction to peer relationships.

In the Twos class, entering the peer world starts in subtle, indirect ways. From early in the past year, it was apparent that the children in the Tuesday/Thursday PM Twos were alert to their peers’ activities: When a teacher observed aloud what a child was doing, others would look in that direction, and often some would wander over to see what was happening. For example, one afternoon a child declared that the wooden cubes near the entry door were a bus and plopped down on the front cube. Without speaking to her, other children approached. They turned over the cubes to sit in them, like passengers on the bus. Soon the group was singing along with teacher Jenna to The Wheels on the Bus.

Meanwhile, two children were sitting with me at the play-dough table. One looked across the room at the “bus” and left to join his peers. I continued rolling the play dough and talking to the child still at the table. However, moments later, she turned to look at the bus full of peers behind her. “I’m going over there,” she said as she rose from the table. Rather than stay with the teacher, even in a situation where they could get direct adult attention, these children chose to play with their peers.

Similar situations arose when it came time to pick up milk from the school’s kitchen for snack time. It was not uncommon for the entire class, perhaps save one or two children, to flock to the door.
Then a train of children would amble to the kitchen and back, with teachers accompanying them with a song.

Given the tenuousness of 2-year-olds’ social connections, teachers can play an essential role in facilitating their interactive play. For example, they can offer props, highlight similar interests, introduce play scenario ideas and bridge social connections. However, psychologist Carollie Howes proposes, in a 1987 review of research in Early Childhood Research Quarterly, that teachers foster peer interaction in another way: by attending closely to toddlers’ play, but not intervening. This gives children the chance to figure out how to relate to one another on terms they mutually understand—and teachers will be ready to step in if needed.

The children’s interactions at the beginning of the school year often involved imitation, such as adding a seat to the bus. Such imitation involves not just seeing, but also understanding the other child’s behavior (What exactly are they doing?). These efforts challenge children to think about their peer’s intentions (Why are they doing that?).

Over the course of the year, as their language skills have developed, this attentiveness to peers has expanded to forays into interactive play. Interacting directly with peers, without a teacher mediating the exchange, is a big step. Adults make efforts to clarify intentions and ideas in a way that peers do not. Psychologist Celia Brownell and colleagues note the challenge in their 2006 article in the journal Child Development:

The following exchange is illustrative of the children's growing interest in social contact and expressive language, as well as the challenges posed by miscommunications. I was nearby during this interaction and thought about entering to mediate and defuse a potential conflict, but decided to listen and see how the children would respond to each other. The children did an impressive job of defusing a potential conflict situation and working with the communicative overtures that peers offer. If I had stepped in right away, this would not have happened.

Hilton: “This my house.”
Omead: “This MY house, not your house. Because, I'm going car…” [inaudible]
Lauren: “Your house is kinda different.”
Omead: “What—my house?”
Lauren: “Yah. But what color is it?”
Omead: “[inaudible]…the park.”
Lauren: “No, that's not color, is it—what color is it?”
Hilton: (to me, smiling) “Not the park.”
Lauren: “I already did go on an airport.”

Harmonious social interactions are complex accomplishments, requiring more than just language. They also involve understanding nonverbal cues, imitation, how to control emotions and impulses, cause–effect relations, and how to share attention with someone else. Not surprisingly, pretend play with peers is challenging for these young children, who have not been in the world for very long. They are early in the process of learning to take another person’s perspective, identify their emotions and understand how to enact play scenarios with others. Their expressive language often does not reflect the breadth of their ideas. Given these challenges, the efforts they make are that much more impressive and delightful.

At the beginning of the year, most social exchanges were mediated by a teacher. By late winter, the children were making overtures directly to each other and responding to peer questions and comments. They were starting to see peers as true social partners. The experience of interacting with peers, rather than adults, tests and extends the bounds of children’s social understandings.
Building Relationships With Materials
By Jeanne Zuech, Head Teacher

A 3-year-old boy was in the block area, quietly observing other children, but not building. He seemed to be glancing at blocks—two thin arcs—that another child had left on the carpet. Suddenly, the boy walked over and knelt by the arcs. He turned one arc upside-down, and as it rocked slightly he attempted to balance the second arc on top. He tried to create this full circle shape several times, but each effort was offset just enough to slip apart. Then, oh-so-gently, he mastered how to align the arc edges as his hands slowly let go. He sat back and smiled at his own accomplishment, paused, then moved on to play somewhere else.

Over the course of many months this past year, the East PM teachers examined “relationships” the children built in the classroom and outside. We specifically noted connections children made with materials such as blocks, water and paint. The team used the oxforddictionaries.com North American English definition of relationship—the way in which two or more concepts, objects, or people are connected, or the state of being connected—as our anchor. Teachers took detailed notes and photographs of the children’s extraordinary connections as they played and made sense of their world. Teachers studied this documentation and decided which stories best showcased relationships to display on our classroom communication board. The display board served as an invitation for children, parents and visitors to learn more about how children establish relationships with materials. In turn, the display board afforded new connections between the children and their own stories hanging on the walls.

At Bing, children can move freely inside and outside the classroom. When the team documented children’s engagement with water, we looked closer at two stories that honored children’s freedom of choice and freedom of movement at Bing: a puddle and a complex water system.

Four-year-old Kayla had a brief but seemingly powerful relationship with a puddle near the patio one afternoon. She sat in front of the shallow puddle for a few minutes, at times gently touching the water with her finger, and at other times swaying a stick back and forth through the puddle. A basketball game carried on right behind her, block builders worked to the left of her, children pushed carts in the grass beyond her: She took no notice. All the while, Kayla was completely focused, having her quiet relationship with the puddle, even when the rest of the world was busy all around her.

Four-year-old Nolan worked at the water table for an extensive period of time. He experimented with tools in different ways to allow water to flow from varying heights and positions. At one point, he held a small container of water above his head in one hand and poured it into a tube held by his other hand. The tube was connected to an upside-down funnel that was placed atop an upright funnel. A tube leading from beneath the funnels would, potentially, allow the water to flow into the water table. Of course, in the end, it doesn’t matter if the water flowed all the way. It does matter that this boy invented a five-part water system and was determined to test it out. Nolan demonstrated how materials are used in relationship to each other for a specific experiment.

The East PM teachers also documented some interesting activities at the painting easels. Daily, the easels offer opportunities for creative representation and expression. Two stories unfolded that showcased surprising engagements with paper and paint: One child created a Roman shield, and another child held the easel paper up in her own way.

At Bing, each classroom has a design table where diverse materials are available on open shelves nearby for child-
invented designs or art. The shelves are stocked with paper, recyclables, staplers, tape, pencils and more. One afternoon, 5-year-old Walker had a plan as soon as he arrived at the table, stating, “I want to make a Roman shield.” He thought out loud, “Hmm, I need red. Those papers [strips of paper on the shelves] are too small. Hmmmm.” He glanced over at the easel that is right next to the art table and announced, “That is the size I need.” He painted the entire easel paper red, left it on the easel and returned to the design table, where he began to snip away at light-colored paper. Piece by piece, Walker brought the papers back to the now red sheet of paper on the easel and applied the light-colored paper in the center of what was now becoming his shield. To create his Roman emblem, Walker centered two large half-circle papers, then he carefully positioned three smaller rectangular shapes. He used the paint as the adhesive for the emblem and completed his shield. Later, after his work dried, Walker removed it from the easel, attached a paper loop to the back of it for his arm to go through, and headed outside to put the shield to use.

On a different day, 4-year-old Maya began her easel painting with one paintbrush at a time, going up and down, again and again, on her paper. At one point, she opened the two clips at the top of the easel so she could paint the paper they had covered—blue paint on the left, brown paint on the right. Without missing a beat, she placed her left hand in the center of the paper—fingers fanned out—to hold her canvas in place, then continued her work, never asking for help.

Navigating Change

By Peckie Peters, Head Teacher

Change is inevitable. Knowing that, I eagerly jumped in as one of the new head teachers in Center PM, after being firmly rooted in West AM for the past 15 years. Helping young children grow in resilience and flexibility with regard to change is something I do every day as an early childhood teacher. Families move, new children come into the classroom (whether from the Twos class or from Germany) and we help them make new friends and see the possibilities of their new environment. We help them learn new words in a language different from their own, we help them make overtures to play, and we help them make connections with peers, teachers and the classroom pet. My own transition heightened my feelings for what children must feel, and this article is a reflection on that process.

Learning to cope with transitions is a demanding and important skill for young children to develop, as transitions happen hourly, daily, weekly and throughout our lives. Sometimes the transitions are minor, or perhaps even mundane, like when a child has to leave the park to go home for a nap, or when it’s time to stop playing to go inside for a snack. Other times, they are major: having a new baby sister or brother, moving to a new house or coming to a new school. We all learn to cope with changes by experiencing them and by developing strategies for anticipating and responding to what comes our way. The primary difference between adults and children is that adults tend to be the ones who get to make decisions about changes. As a result, they get to think about the implications involved and use their previous experiences to guide them through the emotions they encounter. Children, who lack this repertoire of experience, have to work through their emotions, relying on adults to help them understand their feelings and navigate the transitions.

For example, the first day of school is a big transition for all of us, and while it can be exciting, it can also be stressful. For those who are returning to something familiar, the anticipation can produce a variety of emotions from excitement to anxiety. For children who are coming for the first time, it can produce joy, but it can also elicit concern or sadness. Thinking about saying goodbye to parents, meeting new teachers and children, seeing old friends, and being in a school environment can lead to unfamiliar emotions. As the children arrive, teachers can see in their bodies and their faces this range of feelings from happiness to unease. I am struck by the thought that their experience is similar to mine, yet I recognize that they don’t have the same brain capacity for regulating their behavior or their emotions. How, then, can we as adults support this process?

Tovah Klein, a professor at Barnard College, describes how “…most of us prefer consistency, to have things stay the same. Comfort comes in knowing what to expect. Nowhere is this more apparent than with children before age 5.” Young children live in the moment and have to
learn through experience how to predict what is coming next—and how to understand and cope with the changes that arise. How children manage transitions is also impacted by a number of factors including temperament, capacity for organization, developmental level and context. At this stage, children’s brains are still developing the capacity for self-regulation, which makes it challenging for them to manage emotions and have a well-defined sense of time. For children to have success with transitions, they need adults to help them switch their attention from something familiar and comfortable to focus on something different. With development and practice, their skill with transitions improves.

At Bing, we recognize these challenges that children (and parents) face, so our philosophy and methodology for supporting children and families reflects this understanding. For example, each summer and fall, we meet with families who are new to the school for an extended intake conference, in which we talk about their child, their family and their histories. For returning families, we do the same, but it is more a “check-in” to see what might have changed since the last meeting. These conversations help teachers understand what is important to parents and support them more fully.

Because I was making a transition to a new classroom, I was more aware than usual of the transitions the children were experiencing: Some children were completely new to Bing. Others were transitioning from the smaller Twos program to the larger Center PM classroom. Others had spent the summer with their older siblings and were now at school by themselves for the first time. Many were returning to the classroom and missed their previous teachers and noticed the absence of friends who had gone off to other programs or kindergarten. Sometimes this is the most disconcerting: The environment is familiar, but it feels different.

Jessie was one of the children brand-new to Bing and having some difficulty separating from their parents at drop-off time. In Jessie’s case, teachers encouraged her mother to spend some time in the book corner, where Jessie could see her, while they engaged Jessie in other play activities. As Jessie played and her mother observed, both of them developed trust in the teachers, and Jessie was able to separate from her mother. For Jaime, a child who had been at school during the summer with his older sister, being in the classroom without her was a new experience. Spending the first 5 or 10 minutes sitting in a teacher’s lap seemed to help him. Madina, who was returning to the class, had a hard time at the beginning of the year understanding where some friends and teachers from last year had gone. Talking about the changes helped, her mom said, especially when current teachers talked about the previous teachers as their friends and shared stories about what they were doing now. In all of these examples of adapting to change, the process focused on honoring each child and each family’s needs and giving the process time to unfold.

Sometimes parents are more troubled by an upcoming transition than the children are. When Liam’s parents learned that several teachers would be leaving from Center PM, they tried to prepare Liam by talking with him about each of the teachers and where they would be going. Liam’s mother was worried that he would miss the relationships he had formed with previous teachers, but as they talked, she realized that once he understood where they had gone, he was able to move on. She was surprised that he did not seem to share her sadness about losing familiar teachers. She also recognized that the transition represented a loss for her—of her relationships with the former teachers—and raised a fear that some of the expectations she had developed about Bing would no longer be true.

As the year progressed, children, parents, families and teachers built a new community. Looking back on the process gives us insight into the multiple aspects of transitions and how challenging they can be. Through watching and supporting the children and families of Center PM, I learned that shifting from something familiar to something new can cause unease, but that coping with these changes helps develop flexibility and resilience. Adults can support children’s ability to face change independently by helping them anticipate, prepare for, and successfully navigate transitions. As adults, we recognize that the process can be stressful, and we can rely on those same strategies to smooth the way. Patience and understanding will help us all benefit from the positive outcomes that change can bring.
Come Fly With Me: A West PM Project About Flight

By Todd Erickson, Head Teacher

Thrust and lift will help a bird to fly,
Weight and drag bring it down from the sky.
—Bird Flight, a West PM story time song

In the West PM class last fall, hollow-block rocket ships blasted off from the patio to the far reaches of the galaxy. Airplanes took shape on the patio woodworking table and lifted off, while kites came together at the design table and flew throughout the outdoor space. Dramatic/pretend play often focused on a host of flying creatures, including unicorns and pteranodons. Even everyday aerial visitors, like the red-tailed hawks that nest in Bing’s pine trees and the passing airplanes flying overhead, were capturing the attention of our children. Flight was on the children’s minds.

With this widespread budding interest, the West PM teachers decided to embark upon a project that would support our classroom’s fascination with flight. We first brainstormed some of the curricular possibilities that a project focused on flying could provide, including disciplines such as language arts and math as well as broader modalities such as dramatic play, music and block building.

It can be very effective to begin a project by finding out what children know about the project’s subject or topic.

Thrust and lift will help a bird to fly,
Weight and drag bring it down from the sky.
—Bird Flight, a West PM story time song

The teachers asked the children their thoughts about flying. Our initial question was “What do you know about flying?” The answers we received told us much about what children either already knew or wanted to know.

Jack: “Airplanes can go fast before they take off, and before they go fast they go super slow.”
Ainsley: [Flaps her arms.] Sophie: “Planes have wings!”
Catalaya: “That bugs fly really fast.”
Jude: “Flying is a type of paper airplane or a real airplane.”
Tommy: “Airplanes fly with wings!”
Mikey: “That airplanes fly faster.”
Thomas: “I think a bullet flies really fast.”

Niko: “Spaceships. If you need to go to space, you say ‘super sonic’ and you go to space. Or you say ‘ready, steady, go.’”
Kendall: “Rocket ships and airplanes and leaves.”
Anders: “Jumbo jets!”
Katherine L.: “Shoo flies, dragonflies, and pony unicorns.”
Ellie C.: “Mosquitoes!”
Evia: “Bugs! Fleas!”
Dastan: “Balloons, a fly, seashells!”
Peter: “Kites!”
Henry B.: “Helicopters!”

To expand on the topic of flight, we asked the children, “What are some things that fly?” As with the answers to the previous question, children shared with us knowledge that was grounded—age appropriately—in both fact and magical thinking.

Kaya: “Fairies! Butterflies! Bees!”
Caleb: “Airplanes and helis fly in the sky. Spaceships and rocket ships fly too.”
James: “Birds! They have wings!”

Dramatic play provided yet another vehicle for our flying project. Using block building as a springboard, the teachers and children worked together to create signs such as “Airport” and made lists of possible airplane destinations. Along the way, children challenged their collaborative skills and their planning and processing abilities as they constructed airplanes and airports out of blocks. The children also enjoyed extensive opportunities for language arts-related work as they wrote their name and destination on their boarding passes. Even paper airplanes, one of the staples of the flying project, lent themselves to dramatic play, as the children decorated their planes and took on the role of the pilot as they zoomed through the play yard.
Another favorite activity of the children was kite making and flying. As the autumn quarter sailed by, the children embarked on a new aspect of kite making: measuring the length of the string that was to be attached to the kite. A foundational piece of a child’s growing mathematical awareness is measurement, an important vehicle for exploration of an object’s properties. Measurement comprehension begins when a child can identify aspects such as “big” and “heavy,” and later moves to comparisons between objects such as “longer” or “faster.”

We took the kite-making opportunity to help the children think about measurement and use measurement tools. In the case of the kite string, we asked the children, “How long should we make your kite string?” and then introduced the idea of measuring their string upon completion of the kite. We also asked the children what we could use to measure the string, and received some truly original ideas. One day we measured the string with a book (Caps for Sale was chosen). Another day we measured the string with a tape dispenser. Finally, we settled into using the blocks from our block-building area. All of these nonstandard units of measurement provided the children with a hands-on, visual experience with measurement and the property we call “length.” We also asked children to record the length of their kite string, to allow some practice in writing numbers.

As work with the kite strings continued, children’s number sense and understanding of measurement developed:

Teacher Todd: “We can use anything as a tool to measure.”
Olivia: “We can use measuring tape!”
Zeyad: “I want to do 11. Eleven is more than 10.”

Dario: “One thousand is even more.”
Ellie H. (to a peer as both measure): “Mine is one more than yours!”
Cole: “I want 60.”
Bronwyn: “I want 80.”

During the winter quarter, the teachers introduced some of the physics surrounding flight. During story time, we sang Bird Flight (excerpted at the beginning of this article) and used our hands as wings to feel and discuss the concepts of lift and drag. The story time book Stellaluna—about the adventures of a young bat who is separated from her mother—also allowed us to talk about and experiment with the process of echolocation (how some bats “see” in the dark).

The West PM class was very fortunate to be able to host visits from two pilots: Phil Winters (former Navy pilot and husband of Bing Director Jennifer Winters) and Aydin Senkut (private pilot and father of West PM’s Alex Senkut). These expert visitors came to the classroom on consecutive days and shared some of the practical aspects of flying a plane, including how to take off and land, and the type of information the pilot needs to share with and hear from the control tower. The children greatly enjoyed these visits and relished the opportunity to try on a real pilot’s headset.

Children make sense of their world through concrete and playful experiences. The flight project gave our children the chance to explore more deeply some of the various aspects of flight through hands-on involvement as well as abundant opportunities for creativity.

A book by early childhood education experts Lilian Katz and Sylvia Chard, published in 1989, led to renewed interest in classroom projects, which have been a part of the educational landscape since the early 1900s. In a turn-of-the-century effort to move away from a didactic, top-down approach, a classroom environment was created where students became more active—both literally and figuratively—in their own learning. Knowledge was constructed through a dynamic and interdependent process between students and teachers. This became known as a “constructivist” approach.

Many educators, writers and thinkers emerged from the East Coast–based constructivist movement, including early-childhood luminaries Caroline Pratt, creator of the unit blocks that Bing uses today, and John Dewey, who honed a hands-on methodology for organizing a classroom unit of study. Dewey adopted the term “project” to describe this curricular focal point that often emanates from the interests of the children. In their book, Engaging Children’s Minds: The Project Approach, Katz and Chard further expanded this idea in order to examine the process by which children in collaboration with teachers systematically and scientifically uncover individual and collective pieces of meaning that spring from their focal point. They named this process the “project approach.”
Close Encounters With Nature

By Parul Chandra, Head Teacher

One rainy morning while the children in Center AM were outdoors looking for worms, Corinne excitedly spotted a salamander nestled among wet woodchips near the redwood trees. When she brought it inside to show her friends and teachers, we all decided that the salamander might need a safe and comfortable home. And so began one of the children’s many interactions with the rainy world during an especially wet winter.

Every day in Center AM, children encounter natural items such as sand, water, clay and wood—and some days even live creatures. The materials include findings from the beach, forest and other ecosystems. The children also experience nature through events like sighting a hawk, finding feathers or visiting with a polliwog, snail or other critters they discover at school or bring from home. All these act as invitations for children to explore and engage with each other. Many times, rich discussions and experiences grow from these starting points. Experiences with the natural world enhance their social and intellectual development and promote collaboration. And when the rain came down this winter, instead of huddling indoors, the children spent much class time exploring the yard and many of the creatures, like the salamander, residing in it.

After Corinne had brought the salamander indoors, many children gathered around its new “home” made of leaves, tan bark and sticks. They showed great compassion as they cared for the amphibian, which they named Tiny Tim, and contemplated what it might need to survive. Children drew from their previous experience as they recalled the book The Salamander Room, by Anne Mazor. In the story, a boy finds a salamander and imagines what an ideal room for a salamander might look like. Revisiting ideas from the book, children made materials for the salamander’s home. Zia and Nicolai worked together to write and share a list of all the things it would need. They relentlessly searched the yard for worms and wet leaves for the salamander to eat and to crawl on. They learned about nurturing and caring for a small pet as they worked and played together. Some children decorated its home, while some sang songs and observed the creature, and most were interested in the responsibility of caring for it.

Let there be rain…

In the wet weather, the children were overjoyed to jump in puddles, feel raindrops on their hands and head, dig deep pools in the sand, hear the pitter-patter of rain and just watch drops fall on the ground. Children were curious about their newly wet environment, which inspired their conversations. For example, they shared their ideas as to why it rains. Nyxerre commented, “Rain is water and it comes from clouds.” Clare added, “The clouds do not hold it for a long time, so it drops.” Quinn told her classmates, “The clouds make rain, and it’s too heavy for them to hold it.” Lucy said, “When the sky gets colder, the rain turns into snow.” Arul thought there was a lake in the sky that drops the water when it gets full.

One rainy day, some children saw a flash of lightning and later heard the loud rumbling of thunder. The crashing sound of thunder fascinated some of the children, even though they were inside the classroom. Children shared their fear about the booming sound outside, which then generated some interest in lightning and thunder. To build on this interest, teachers brought in books that relate to storms, such as Patricia Polacco’s Thunder Cake. Children enjoyed listening to the story of a grandma who helps quell her granddaughter’s fear of thunder by baking “thunder cake” with her during a storm. At the art table, our children used their culinary skills as we made thunder cake ourselves and later enjoyed it at snack time. Many theories and ideas about thunder and lightning were shared in both small and large groups. And reading a book about thunder and baking a cake that represented the phenomenon helped children explore the salamanders they discovered in our yard.
articulate their intense emotions about storms, including fear. Sage confidently stated, “Thunder is something that lightning left.” To which Kian added, “Thunder is black clouds that shoot out yellow things.” Arya made an analogy: “Lightning is like a crack in the wall.” And Jared displayed an understanding of the sequence: “You know when there’s thunder…you know lightning will come and do you know what? When there’s thunder, there’s electricity. One time I watched a movie and there was thunder and lightning that hit the bar and there was electricity.” Grayson’s experience was more personal: “I heard a thunder sound at my house and it was going like this, ‘BOOM! BOOM! BOOM!’ I was scared so I ran to my dad to hug him.”

A duck visits

After enjoying repeated readings of Robert McCloskey’s classic children’s book *Make Way for Ducklings*, the class was treated to a visit from a real duck. The teachers invited Niko’s grandmother to bring in her pet duck, named Pitter, to our classroom for observation. We created a safe place inside a circular fence in the yard for the duck. Children sat around with clipboards and pencils as they observed, asked questions and drew pictures of the visiting duck. This was an exciting experience for the children, especially for those who have never been up so close to a feathered creature. The whole class gathered around to sing songs and watch her dig for worms and splash in the water. The children’s observation skills were honed as they keenly watched the duck’s movements. It was evident from the children’s conversation, questions and comments that the duck’s visit catalyzed their ability to draw conclusions from past and present experiences. Making these connections is an important cognitive task for young children.

Cory: “I heard her quack.”
Marcel: “Why does she have holes on her nose?”
Niko’s grandmother: “Those are her nostrils—that is how she breathes.”

Interacting with nature can be an antidote to the fast-paced, stressful world to which many young children are exposed, and it encourages an appreciation of the natural world on which we depend. But the primary benefit we see in Center AM is how it enables children to develop as observers: Their curiosity is piqued by what is around them, and they focus for extended periods. All children benefit from exploring and spending time in nature.

All About Worms
By Nandini Bhattacharjya, Head Teacher, and Betsy Koning, Teacher

With all the rainy afternoons this winter, many earthworms came out of their subterranean homes to visit the Twos room’s yard. It was no surprise to see the children so interested in discovering, collecting and observing these little visitors. Many of the children in the Monday/Wednesday PM Twos class embarked on worm hunts: Near the sand area, they lifted up the sliced segments of logs we call tree cookies to search for their quarry, who were often hiding underneath. For the children who were interested in capturing and observing the worms, the teachers provided bug jars that included a lid with a magnifying lens. Teachers noticed the various approaches children used to study and interact with the worms. Some were comfortable holding dozens of worms in their fists, and others preferred to observe them from afar. Children also used clay to represent worms in many shapes and sizes. Some were inspired to write stories, and some illustrated the stories with drawings. Here are some of the children’s words from their worm explorations:

Chip: “I caught some worms.”
Mason: “I saw some worms. I saw a big worm. He was crawling on my finger. This one is doing a flip.”
Ellie: “I saw a little worm. He was on my finger. He tickled me. He is so small and I am so big.”
Zelmyn (who was holding a worm): “My worm gave me a kiss on the cheek. He is slimy. He was crawling on the table. That’s a mommy worm and a baby worm. I like watching them.”
Langley: “Is it a worm? It is a worm. Why is it moving? It’s going to the paper. There are two worms. Is there more? The paper blew the worm away. Then the big worm came closer to the smaller one. He was lifting his head. His tail moves up too. The small went over the big worm. It’s too curvy. I see its eyes. He’s climbing. It’s lifting his head up.”
Lisa: “Oh, oh it’s a snake.”
Isaac: “He’s doing secret things.”
Thatcher: “Where is the worm going?”
Nolan: “I only watch and not touch the worm.”
We went to Arizona with my family in a car!” Janie exclaimed. In early January, the children in West AM were excited to share their travel experiences with us after the long winter break. Their thoughts seemed to revolve around the modes of transportation they had taken. Santiago said, “Coyote Point Museum. I saw iguana, eagles, sea otters, snakes, frogs, raccoons, skunk. In my mama’s truck.” Cecelia announced, “In an airplane to Nana and Oppa’s house.” Discussions about trips developed into conversations about their own experiences with the vehicle they were most familiar with. Ongoing, in-depth discussions on various modes of transportation evolved organically as teachers followed the children’s interest and planned the curriculum each week through careful observations: “I have a red car.” “I don’t know what car I have but it is a big car.” “I think I have a small car.” The children also discussed where they went in their cars. Marcos said, “You go to Tahoe in a car,” and Katie said, “To school in my car.” Some children expressed their understandings about transportation during play. They built cars with gears, and self-driving cars out of hollow blocks and wooden planks, wheels, nuts and bolts. A group of children built a car wash for all of our cars and trucks in the block area.

Information on cars seemed to be abundant: Children knew many features of cars, such as gears, car seats, horns and steering wheels, which they represented through drawings and easel paintings.

Meanwhile, a few children started building train tracks with unit blocks and talking about trains, inspired by their experiences with methods of transportation. There were thoughts about underground trains from children who have visited San Francisco or other cities with subways. Children painted pictures at the easel depicting the BART lines that run in the city. A couple of children attached ramps to the magnetic wall in the sand area to create a subway for the city they had built there.

As the winter rains descended upon us, we decided to focus on transportation on water. We made origami boats to sail on puddles that were forming every day due to the storms. Children learned to follow a sequence and practice precision as they folded several boats, then experimented with different sizes and materials to see if they could prevent their boats from getting soaked in the puddles. They discovered that foil at the bottom of paper boats worked really well.

We explored various modes of transportation through stories, songs and discussions. Books for story time were chosen to expand and support this interest. Following the folding of origami boats, we observed a wave of ship making using unit blocks. Ellie and Colette used unit blocks on a daily basis to build a structure that looked like a ship, and furnished it with the dollhouse furniture. They had rooms for everyone on their ocean liner, even pets. These repeated experiences enabled children to be self-directed and to represent their ideas through the open-ended materials Bing provides.

Around this time we also started to hear: “I go to Nana and Granddad’s house on a plane” (Margaret). “I went to India on a plane” (Avni). “I want to go to outer space. I need to tell my mom. I need a rocket ship” (Wyatt). Many children seemed interested in planes and things that fly. They designed wings for themselves with tissue paper, cardboard, easel paper and finger painting paper. One child struggled to affix the finished wings to his back and learned that he could recruit the help of a sibling and a friend. Soon, many children were eager to help. More than 10 children collaborated, using their expert taping skills to support the child’s idea. They all ran out to the bridge to witness and offer feedback as the child tested his wings. It was remarkable to see them working like scientists: persistent with an idea, changing their plans as necessary, and testing their new designs.

The children’s interest in flight inspired Harry, Ryder’s dad, to bring in his drone to fly in the yard. The children were excited to see the drone go high into the sky, and to see on a monitor what the drone could see. They literally gained a new perspective as they saw the top of Bing School and themselves waving on the patio. The children observed and commented a lot about drones, saying, “It has propellers.” “It
can see things.” “It has lights.” “You need a device to fly the drone.” “It does not have jets, it has batteries.”

Eventually, we came back to where the project began: taking trips. The Big Trip by Valeri Gorbachev generated amazing ideas about where children wanted to go in the world and how they could get there. We saw an opportunity and introduced the globe to them to further support their interest. The children were thoughtful about where they wanted to go as they looked at the globe. When they identified water, they took a boat. They came up with planes, cars and sometimes even a pony to cross over land. Investigating ways to go from the United States to India, Colette said, “I’ll go on a boat, then I’ll find a pony with my brother and then go on a pony all the way to India. Nothing is dangerous to go on except for a goat because it has horns.” One child, while looking at the globe, was intrigued by the large white mass that is Antarctica and imagined taking a trip there in a time machine, and another child imagined crossing the desert on a cheetah. We found that these experiences fostered children’s spatial skills and facilitated topographical understanding—they were able to differentiate between land, mountains (by the lines denoting height) and water.

Roads became another topic of interest. We asked the children, “What do you know about roads?” Children said, “Roads take you to the fair” (Milly). “To Utah!” (Tenley). “I just like to go home!” (Viet-Lin). “To the park and home and Bing School” (Harper). Some knew that the major roads were called “highways” and talked about taking 280 or 101 to come to school. “The road that goes from California to New York is number 80,” said Julian.

With this interest in roads, it was natural to introduce maps to the children. We brought out the map of an area in the play yard we call the Buck 40, and they engaged in a game of finding hidden pictures of bunnies in their yard. Some children enjoyed finding the bunnies, and many marked the places they found or hid the bunny with an X on their map. The X markings led to the idea of treasure maps. The children made X marks in the sand to indicate the spot that held their handmade treasures and treasure boxes.

As the children’s interest in maps grew, we introduced the book As the Crow Flies—which is about animals and their maps: In the story, animals follow maps to get to their destination. As the children observed the routes the animals took on the maps, a child pointed out that there were shorter ways for the animals to get to their destination. This sparked many discussions about “short cuts.” We talked about the long way and the short way to go from point A to point B. We wondered if the shorter path is always the quickest or easiest.

At the end of the winter quarter, we took a walk to the mailbox down the road from the school to drop off a letter to a former teacher who had recently moved to New York. The children followed a campus map from Bing to the mailbox. When they got back, they described the path they took: “We went straight, then on a rainbow curve, and then we saw the mailbox.” When they drew their path to the mailbox, they drew double lines and said, “That’s because we had to come back the same way.”

It was exciting to see the children’s interest in roads and maps emerge from their experiences with different modes of transportation. We can all agree that knowing where you are, where you are going and how to get there are valuable lessons for everyone.
East AM welcomed the addition of three little drawing “robots” to our classroom community this spring, constructed and introduced by one of our teachers. They were, in fact, simple electric circuits consisting of a battery, a small DC hobby motor and a switch, all connected with wires and mounted on a square of scrap cardboard no more than 6 inches across. The robots’ “legs” were washable markers, attached, with the tips pointing down, at each of the squares’ corners. The teachers wanted the robots to “dance” on the floor (with the marker caps on) or “draw” on paper (with the caps removed), so we attached small weights to the motor shafts to make the constructions vibrate and wobble. Children were able to playfully interact with these scribble machines while discovering more about the principles of a basic circuit: Power from the battery flows out of one end of the battery and continues along wires through the motor and back to the opposite end of the battery to complete an unbroken loop, which turns the motor. The concept of a switch is simply a means of breaking the electrical loop to turn off the motor and reconnecting it to turn the circuit on.

We wanted the children to be introduced to these machines and the workings of circuits not through a didactic lesson but through play, exploring what the machines can and cannot do, and noting the similarities and differences between them: the way they operate and move, and the different kinds of marks they leave on paper. We put faces on the robots and gave them names (HappyBot, Art and BabyBot) because we wanted children to engage with them in a whimsical way and relate to their “personalities.” We believe that young children discover scientific principles and understandings through hands-on, repeated experiences in a meaningful, playful context. For example, they learn intuitively in their play about the properties of balls and wheels on ramps without a teacher’s discussion of inclined planes. We were confident that the children’s curiosity and experimentation would lead them to their own discoveries, observations, questions and theories.

We chose cardboard bases because we wanted children to interact with the robots not as intractable finished products, but as flexible, modifiable, and ultimately repairable devices once they inevitably broke down or wore out from repeated use. We also hoped that using a material that they were familiar with through their own constructions in the classroom would encourage confidence in their explorations of robot mechanics. Also, installing the components on a cardboard base allowed for fast prototyping when it came to building additional machines with the children—simple construction required only tape for connecting components and a pair of scissors for punching holes for the marker legs.

Although it could have been tempting to focus the children’s initial interactions on why these scribble-bots worked, explaining to them the principles of a simple circuit, we wanted them to explore how they worked instead. In watching how each of the robots moved within a table-top tray—especially when leaving traces of their movements on paper—the children became very knowledgeable about each machine’s unique characteristics. They began to predict the kind of marks that would be left, learned how to adjust the number of and orientation of the legs of each robot, and discovered how they could interact with and affect their movements (e.g., tilting the tray containing the paper, or lightly pushing or guiding the robot). They also became proficient at looking at a finished bot-art drawing and identifying which robot(s) had a hand (well, leg) in creating it: “BabyBot” tended to make circular patterns, “Art” did more bouncing—leading to drawing dotted lines—while “HappyBot” made smoother lines with sharp turns as it bounced off the sides of the tray.

Initially, a teacher’s presence at the table was quite helpful, showing children how to turn the robots on and off, helping them change out the markers for colors of their choosing, and facilitating turn taking. But by the end of the week, the children were switching out the legs carefully and independently, collaborating with others, sharing the machines and explaining to each other how to use the draw-bots without the need for much adult assistance.

With repeated experiences, children learned how to affect the movements of
the machines by adjusting the heights and angles of the markers. For example, they very much wanted to have robots that drew circles and carefully watched and noticed that a robot with three legs, one slightly shorter than the other two, would pivot on the shorter leg while the other two markers would rotate around it. Children also began to make suggestions for modifications, such as attaching extra legs or adding cardboard “stabilizers” to keep the legs in the orientation they desired. In our explorations, children did begin to ask why the robots worked. These questions were often provoked by unexpected events, such as the battery vibrating its way out of the machine, or a loose wire somewhere in the circuit.

To answer such questions, we looked at the path of the wires connecting everything in a loop from one end of the battery to the other, perhaps interrupted by a switch that opened and closed the circle. BabyBot had the most basic switch: simply attaching one battery wire to the motor's contact. To unbalance the motors so the robots would vibrate, we attached small weights (in the form of alligator clips) to the rotating shafts. When these inevitably fell off, we could see that the robot stopped moving entirely—until the clip was reattached. HappyBot also had a potentiometer (or as one child explained it to her father, the “volume”) added to its circuit, so that we could see how changing the speed of the motor affected the robot’s movements.

After playing with our original robots, we built a couple more, so the children could participate in the construction and see that there were many ways to go about making a drawing machine. At many children’s request, we also provided parents with directions and resources to continue their robot play at home.

Related: Video available at youtu.be/-EUK7ProK2I

Play in Music
By Leslie Hart, Music Specialist

At a Bing staff development day in early May, I gave a presentation that drew connections between language learning and music learning, and shared ideas about creativity and musicianship. As in language acquisition, in music we learn to listen, speak (by singing or playing an instrument), read and write (musical notation), compose and analyze. Music, like language, has syntax and vocabulary, patterns (rhythmic, tonal, harmonic, expressive), phrases and forms (analogous to the structure of a story with a beginning, middle and end—larger groupings of ideas). Like language, music is learned and communicated aurally (listening) and orally (speaking) and is conversational. Understanding music learning provides a context for engaging musically with children. This presentation was based on Christopher Azzara’s teaching and research in music learning. Azzara is an internationally renowned music educator and a leading figure in the field of music teaching and learning, incorporating creativity and improvisation. Azzara made recommendations and provided insights as I developed the presentation to the Bing staff.

Imagine a child spontaneously singing a poem with rhymes, reusing vocabulary, following a typical form and demonstrating movement in his body. The transcribed musical example included below, I Like to Hug, is an example of this form of expression. The song was improvised by a child after the birth of his baby brother. If you listen to the audio file [available online: see sidebar], you can hear him telling me that I’m singing his melody incorrectly, and he then helped me to sing it correctly. The transcription makes apparent his reuse of melodic material. His rhythmic patterns repeat and also contain variety. His lyrics are reused, he understands and uses space and silence, and his song has a clear beginning, middle and end. On top of everything else, the entire song is performed while he keeps a steady beat on a triangle.

Sometimes parents ask what they can do at home to encourage musical play. Musical conversations are a great starting point for parents and caregivers. When engaging a child in
musical conversation, give the child time and space to respond. “What’s your song today?” is a great way to begin the conversation. Listen to their idea. After they sing an idea, repeat it back. Adults can also expand the child’s idea or change it. To encourage additional musical ideas and musical conversation, sing in a child-friendly range (for example, keys of D and Eb)—it may be difficult for some children to sing in lower keys. Musical play can also include singing songs together in the car, leaving out the last note of a familiar song so the child can imagine the sound, singing the first part of a song and letting the child improvise the rest, and showing different beats and movements in your body, which can inspire children to do the same. Additional ways to play with music include changing the tonality, meter, tempo, articulation and volume.

Audio files of the following recordings are available online at bingschool.stanford.edu/songs-play-music:
1. In Chocolate Milk, a child sings a repetitious idea about getting chocolate milk when he goes to the zoo.
2. Cameras and Phone demonstrates a child singing about what is immediately in front of her—an old cell phone and camera.
3. A child sings Bing’s well-known Goodbye Children in minor mode.
4. This Land Is Your Land was performed spontaneously by a child (with the first two verses) with steady tempo, time and rhythm on a drum.
5. I Like to Hug demonstrates understanding of form in music as well as syntax. This song is long, more than twice as long as Twinkle, Twinkle, Little Star, yet the child repeats his ideas throughout and follows a normal phrase structure (similar to sentences).

VISITORS FROM ABROAD

Four groups of educators from China, Japan and Singapore visited Bing Nursery School in the 2016–2017 school year to learn about the school’s philosophy and discuss educational practices. At left above: A delegation from China. Among those pictured are Mina Kim, associate professor of education at San Francisco State University (back row, fourth from right); Bing Nursery School Director Jennifer Winters (back row, fifth from right); Chia-wa Yeh, Bing head teacher (back row, sixth from right); and Beth Wise, Bing associate director (back row, seventh from right). At right above: Visitors from Japan.

One might think that my musical interactions with children at Bing are unique, but they’re not. I hear babies in grocery stores respond to a song playing nearby by singing in the same key or moving to the beat. Children are born musical. A baby’s coos and cries are usually based on a specific pitch that the child will continually come back to. As they grow and engage in music, children demonstrate their ability to compare, predict, anticipate and group musical ideas similar to patterns in language learning. Children have potential in music, much like any other area, and some children have the potential to achieve more in music than in any other area.
At last year’s fall staff development day, Bing staff discussed how to meet the needs of all children in the classroom, learned about some of the research that was being carried out at the school, and began a dialogue to examine how the key components of the school’s mission are manifested in the daily practices at the school. This day of presentations and discussion took place Oct. 7, 2016.

The first presentation was given by Bing teachers Danielle Nakamatsu-Wong and Andrea Fewster, who shared insights gained from their experiences in the fields of early intervention and speech-language pathology, respectively. Their presentation focused on the theme of identifying and supporting children’s unique needs within the classroom, with the aim of setting in place a framework for observing children’s abilities and sharing information with families in a timely and sensitive manner. Although we recognize that children do not all share the same developmental path, we do sometimes have concerns about a child’s rate of development in a given domain. As early childhood educators, it is essential that we know how to communicate these concerns to families and to direct parents toward appropriate resources.

Drawing on her experience as an early interventionist, Nakamatsu-Wong explained the pathway for referral to early intervention services for children under 3 years of age. Fewster, a former speech-language pathologist in a local public school district, shed light on the referral process for speech-and-language intervention, occupational therapy and psychoeducational evaluations for children over the age of 3. This sparked a conversation among the teachers about how we can best support families during the referral process, and also what role we may play in assisting professionals in their evaluation of a child’s development.

Nakamatsu-Wong and Fewster highlighted the importance of helping families gain access to early intervention services for their children and provided an overview of accommodations and adaptations that teachers can implement in the classroom to best support a child’s particular needs.

Ellie Chestnut, a Stanford doctoral student in psychology (now a postdoctoral researcher at NYU), described the research on language she was doing with older children based on her prior work at Bing. That Bing research explored how children perceive expressions of similarity, such as “zebras are like horses.” On the surface, she said, it seems as if “zebras are like horses” and “horses are like zebras” should have the same meaning, since both express similarity between horses and zebras. Yet, adults and children consistently prefer “zebras are like horses.” This is because statements with a subject-complement structure frame the subject as the less typical variant and the complement as the more typical or important reference point. When statements contain novel items, sensitivity to this asymmetry actually serves as a learning mechanism. Upon hearing a sentence with two made-up words, “Zum is like Gax,” for example, listeners infer that Gax, by virtue of being framed as the reference point, is more important or typical than Zum.

Chestnut and her advisor, psychology professor Ellen Markman, went on to explore the implication of this implicit learning mechanism for gender stereotypes. In their follow-up study, children ages 7 to 10 (128 participants total) listened to statements of equality about girls and boys from another planet (e.g., “On this planet, boys are as good as girls at snapping.”). When asked who must work harder to be good at the activity, or who is naturally better at the activity, children associated greater natural ability and less effort with the gender framed as the reference point. Thus, subject-complement sentences expressing equal ability can nevertheless instill beliefs about gender differences.

This is especially relevant to teachers, noted Chestnut, because one common way of encouraging girls and women to enter the STEM fields—science, technology, engineering and math—is to say, for example, “Girls are as good as boys at math.” For children who do not yet know math-related gender stereotypes, however, such statements may actually suggest that boys are not only more typical or of higher status than girls in this domain, but also that they are naturally more talented.

Mika Asaba, a Stanford doctoral student and former lab manager of the Social Learning Lab in the Department of Psychology, shared a study on children’s understanding of time and difficulty in connection with completing physical tasks. In this project, 4- to 5-year-olds viewed several pairs of people who built block structures of different types (e.g., one member of the pair built a 10-block vertical structure, while the other member built a 10-block horizontal structure). The children were asked either “Who was done first?” (time) or “Which one is easier to make?” (difficulty). The researchers found that children performed well on all of the trials when asked the difficulty question, but children’s performance for the time question was weaker. Interestingly, they
found that as children got older, they succeeded on the time questions more often. The researchers are now designing new trials to look at whether young children are sensitive to other dimensions (e.g., the agent’s competence) when assessing how much time it will take or how difficult it will be to achieve a goal.

The entire staff also engaged in a school-wide exercise to articulate Bing’s mission, identify shared values and examine how these are manifested in our day-to-day practices. The mission statement:

*Bing Nursery School is a program within the School of Humanities and Sciences at Stanford University. Its mission is to promote understanding of child development and improve the lives of young children. The school works toward this mission in four ways: 1) providing a laboratory setting for research in child development; 2) teaching undergraduate students through seminars, observations, and hands-on experiences in the classroom; 3) providing children and families with an exemplary program of play-based, child-centered education; and 4) engaging parents and educators to promote best practice in early childhood education.*

The fourth component was added in 2009 when the school launched a new, expanded program for parents and educators. The program was made possible with the renovation of the Tower House, which adjoins the school and serves as a site for informal talks and seminars for parents and educators, as well as for teaching undergraduate classes and work space for teachers.

Bing’s head teachers and administrators had participated in a similar exercise in September. At that time, they took part in a structured brainstorming exercise in which they identified principles within each of the four key components of the school’s mission. At the staff development day the next month, the entire staff repeated the brainstorming and discussion exercise, this time using the general practices outlined by the head teachers as a guide. Focusing on tangible, specific and concrete practices, Bing’s staff members articulated ways that they fulfilled the school’s mission.

The exercise produced dozens of ideas for each general practice and even more for each part of Bing’s overall mission “to promote understanding of child development and improve the lives of young children.” Perhaps more importantly, the experience served to help teachers and staff pinpoint what they can be doing—how they can learn from each other and improve their practices through simple behaviors that are nevertheless profoundly thoughtful. This will be an ongoing process that brings many implicit ideas to the surface, and Bing staff will continue to articulate the school’s mission through clear documentation and communications.

**Winter Staff Development Day: Understanding Biases**

*By Raquel Ryan, Teacher*

At Bing’s winter staff development day this February, staff members gathered for a lecture on new psychological research on self-esteem and for a workshop on cultural competency and identifying biases. The lecture, given by developmental psychologist Eddie Brummelman, focused on the relationship between praise and self-esteem. [For a detailed account of this lecture, please see page 8.] The workshop, “Fast Forward: Moving From What We Know to Becoming More Culturally Competent,” was given by Mary Foston-English, assistant director of Stanford’s Faculty and Staff Help Center. She explained that in order to move forward to the hard work of anti-bias education, we must first recognize the following concepts: We do see skin color, we do see physical differences and we all stereotype. However, through self-reflection and dialogue, we can become aware of our biases and move toward inclusion and respect for all people.

Foston-English began with her personal story, which included painful memories of growing up African-American in the South. She hoped to encourage vulnerability and openness among us as we began to examine what bias means for us individually. Her goals for the day included increasing cultural awareness and sensitivity, and normalizing and identifying our own biases.

After a brief explanation of the history of anti-bias education, she went through the five anti-bias learning goals for adults, as defined by *Leading Anti-Bias Early Childhood Programs*, a book by Louise Derman-Sparks, Debbie LeeKeenan and John Nimmo. The first of these goals is to increase awareness and understanding of one’s own social identity, with its many facets, including race, gender, socioeconomic status, ethnicity, family structure, religion, sexual orientation and abilities/disabilities. The second is to examine one’s own learning of diversity and differences. The third is to identify any personal advantages and disadvantages resulting from social discrimination, and also any prejudices and stereotypes one is holding about oneself or others. The fourth is to explore ideas, feelings and experiences of social justice activism. And the last is to open up dialogue with colleagues and families about these goals.

These five goals emphasize the importance of self-reflection and assessment...
before attempting to create and implement an anti-bias curriculum in the classroom. As educators, we often find ourselves debating whether the responsibility falls to teachers or parents when it comes to addressing challenging topics, such as racism, sexism, and other forms of injustice that are raised in an anti-bias curriculum. Prejudices and biases are present in every person, and anti-bias work can start only when people are willing to be critical of those biases. In the words of Foston-English, “The more work you do on yourself, the more effective you’re going to be. Start with where you are.”

We then discussed how advocacy for social justice, individuals’ abilities to do the work, and differences in cultural values between members can influence institutions. Foston-English emphasized that when we are not able to address and talk about our differences, we fill in the blanks with our own made-up stories. In an effort to get these kinds of conversations started between staff members at Bing, we broke into small groups for an exercise, filling in worksheets to name our different identities, such as gender, sexual orientation, religious faith and ethnicity, and then sharing which identities were most important to us and why. As a result, many of us learned something new about our colleagues.

At the end of the day, we came back together to reflect on what we had learned and how we felt about it. Most staff members said they felt that the workshop on bias was just the beginning of a longer conversation, and that they enjoyed learning about anti-bias education and about each other. In beginning to think about our own identities and how they shape our biases, we have started to lay the foundation for more complex and nuanced conversations regarding how best to address the difficult topics of racism, sexism and other types of social injustice.

During our next staff development day, held this spring, we continued our exploration of anti-bias work. Megan Hanley, a special education teacher from the San Jose Unified School District, gave a presentation on anti-racist education, focusing on theory and pedagogy. We also discussed how best to understand the varied life experiences of children and families, as well as those of our own colleagues, especially those who experience discrimination based on their race.

Spring Staff Development Day: Research Update

By Grace Bennett-Pierre and Sophie Bridgers, Stanford psychology researchers

Learning about how children understand the relationship between complexity, effort and time and how children help others are at the core of two studies that psychology professor Hyowon Gweon’s Social Learning Lab at Stanford has conducted at Bing Nursery School this year.

We presented these two studies to the Bing staff this April as part of Bing’s spring staff development day. Bing’s music specialist Leslie Hart also presented on play in music, drawing parallels between language learning and music learning. [See page 25 for more information.]

Grace started by explaining the lab’s research on how children’s understanding of difficulty of tasks relates to decision-making. This project stems from a separate ongoing study about children’s understanding of difficulty [see page 27 for more information] and investigates whether children use information about difficulty when making decisions about effective collaboration on physical tasks. Researchers introduced 3-, 4- and 5-year-old children to two block structures, one that was “hard” to build (a 15-block pyramid) and one that was “easy” (a six-block structure), and told them that one puppet would build one, and another puppet would build the other. The researchers then showed children a third puppet and asked them to choose who that puppet should help. Although most of the children were able to identify the “harder” and “easier” structures, only 5-year-olds consistently said that the third puppet should help the puppet tasked with the bigger, more difficult tower. This suggests that even when children are sensitive to the concept of difficulty, they may not be able to use that understanding in their decision-making process until they are about 5 years old.

The lab’s researchers have also begun collecting data for a follow-up project to determine whether younger children might be able to use their understanding of difficulty when making non-cooperative decisions. In this study, the researchers tell children that a puppet really wants to get through one of two doors to get to a cookie and that the puppet has to build one of two towers to get through a door. They ask children to pick which tower the puppet should build, with the expectation that children will choose the smaller, “easier” tower.

Next, Sophie presented on children’s decisions about how to help other people, a project she has been working on with Gweon and master’s student Sara Altman. To help effectively, people need to
understand why someone is struggling so they can tailor their assistance to the helpee’s needs. One important distinction is whether the cause of failure is the person’s own actions or an external factor. For example, imagine you encounter a frustrated traveler at a train station, fumbling with a ticket machine. How might you help? If the traveler is inserting the bill in the wrong direction, you might kindly re-orient the bill, but if you know the machine is out of order, you might direct the traveler to a different machine.

In this study, we explore 2- and 3-year-olds’ abilities to reason about the causes of another person’s failed actions and their decisions about how to help. In the study, children learn how to make two toys play music, and then they watch as someone else tries and fails to make one of the toys work. For half of the children, this person pushes the correct button but the toy doesn’t work, suggesting the toy is broken. For the other children, this person pushes the wrong button and the toy doesn’t work, suggesting the person doesn’t know how to make the toy function. We are curious whether the way children try to help differs depending on the reason the person is struggling. So far, our results indicate that children are able to use their experience with the toys to 1) figure out why someone is struggling to make a toy work, and 2) provide help that addresses this reason (i.e., when the initial toy is broken, children are more likely to offer a replacement toy; when someone is pressing the wrong button to operate the toy, children are more likely to correct the action).

Editor’s note: Grace Bennett-Pierre is the research coordinator of the Social Learning Lab at Stanford. Sophie Bridgers is a 4th-year Stanford doctoral student in psychology.

The Society for Research in Child Development hosted its biennial meeting in Austin, Texas, April 6–8. Approximately 6,200 participants attended the conference, including researchers, practitioners and professionals in human development. About half of the attendees were students and early-career professionals. Many of the Stanford graduate students who conduct studies at Bing presented at the conference, which hosted hundreds of talks and poster sessions featuring the latest research on child development.

The following talk and panel discussion were among the most informative and insightful sessions I attended.

The Reading Brain and Dyslexia

One of the most thought-provoking talks I attended was on how the brain enables reading. The speaker was Maryanne Wolf, psychologist and leading expert on reading and dyslexia. “Reading is a cultural invention, and we were never born to read,” said Wolf. She likened the mechanism for reading to a circuit formed in the brain by connecting existing parts that were originally designed for different purposes such as vision, language and cognition. The remarkable thing, she said, is the brain’s plasticity, which enables it to adapt to accomplish the purpose of reading. Wolf cited French cognitive neuroscientist Stanislas Dehaene’s research, showing that the brain is able to recycle and repurpose groups of neurons to form a connected circuit while reading. “Reading can be learned only because of the brain’s plastic design, and when reading takes place, that individual brain is forever changed, both physiologically and intellectually,” Wolf stated in her book *Proust and the Squid: The Story and Science of the Reading Brain*.

What are the parts of the reading circuit? It begins with oral language development, as children develop essential understanding of sound patterns and structures of words (phonological awareness). Phonemic awareness refers to the understanding of the smallest units of sound. For example, the word “hat” consists of three distinct sounds (phonemes): /h/æ/t/. Having an understanding of representation of letters, letter patterns and conventions of print (e.g., left to right scanning for European writing systems) is also important (orthographic development). Learning meanings of words (semantic development) and how to combine words to form sentences (syntactic development) are other parts.

What can parents do to bolster children’s language development before they start learning to read? Wolf highlighted the importance of speaking and reading to children from early on (for example, reading *Mother Goose* rhymes to children gives them excellent
representations of language sounds). Research by John Hutton and his colleagues published in 2015 showed that children with greater reading exposure between parent and child in the home environment show robust activation in the area of the brain that supports skills in semantic processing.

Wolf also encouraged an interactive reading method called “dialogic reading,” which involves children in the process. (This technique works best one-on-one or with a small group of children.) For example, when reading familiar books, leave a blank at the end of repeated phrases so children can complete them. Other strategies include asking questions using “what,” “when,” “where” and “how” to invite children to participate in the storytelling process as well as to expand their vocabulary.

Wolf’s talk affirms Bing’s holistic approach to children’s emerging literacy. To facilitate children’s development, teachers create a print-rich environment with lots of books and engage with them in a variety of activities such as reading to them, sharing conversations, singing songs and playing rhyming games.

Wolf also talked about cerebrodiversity, referring to the wide range of neurological wiring found in different individuals. One variant that results in difficulty reading is dyslexia. But dyslexia, Wolf stressed, should not be looked at as a deficit, noting that individuals with a history of dyslexia tend to be able to see visual patterns—big picture, both literally and figuratively—and have superior visual spatial ability to problem-solve. They tend to become artists, architects, scientists and entrepreneurs—in fact, people who think outside the box.

**Early Gender Gap in STEM Learning and Motivation**

Another topic of interest is the early gender gap in the subjects of science, technology, engineering and mathematics, known as “STEM.” Allison Master, a Stanford alumna who conducted studies at Bing while pursuing her doctorate, hosted a roundtable discussion on this subject.

During the discussion, panelist Susan Levine of the University of Chicago highlighted the importance of fostering spatial thinking in girls because it might encourage learning in STEM domains. Levine’s research has found that parents of boys used more spatial language than parents of girls when they engaged in puzzles. In one of her studies, researchers informed parents that spatial skills facilitate learning in subjects such as chemistry and physics later in school, and that they can foster their children’s skills by engaging in activities such as building with blocks, playing with puzzles and intentionally using spatial language. They explained to parents that spatial thinking is thinking about objects (e.g., properties such as shape and size) and how things move in space. The researchers also scripted the language in storybooks, thus providing parents with a model. Another panelist, David Uttal of Northwestern University, stated that arts education—visual arts, for example—enhances girls’ spatial thinking, and that separation of art and science is problematic.

Valuing raw talent may account for differences in female representation in certain fields in higher education. Psychologist Andrei Cimpian of NYU, who spent several years at Bing as a graduate student, co-conducted a nationwide survey of academics in 30 fields and asked the practitioners what determines top performers in their field—essentially what it takes to succeed. Some fields (e.g., mathematics, physics, philosophy) view brilliance as a major factor in success, which reflects a fixed mindset of believing in innate talent. Those fields also have lower female representation, possibly because women are negatively stereotyped in terms of brilliance compared to males.

Do children associate brilliance with boys? Cimpian and psychologist Lin Bian—a postdoctoral scholar at Stanford who started conducting research at Bing this summer—found that starting at age 6, girls tend to be less likely than boys to view children and adults of the same gender as “really, really smart.” They also tend to be less likely to choose games that are for smart children. Acquiring such stereotypes about talent may negatively affect children’s future aspirations. Cimpian noted that there is evidence that gender gaps in math are greater in societies that have stronger stereotypes and are more gender-unequal.

Cimpian cited Stanford psychologist Carol Dweck’s theory on growth vs. fixed mindset as an antidote to counter these negative stereotypes—by fostering a mindset that abilities can be acquired through effort and hard work. Individuals who view talent as innate tend to have a fixed view on abilities and may react negatively to failure, rather than as an opportunity to learn. He suggested that parents could inhabit the growth mindset themselves and guide children when they encounter difficulties.  

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**SELF PORTRAITS**

By Giovanna L., 4 years 2 months

By Izzy K., 4 years 9 months
NAEYC Professional Learning Institute
By Chia-wa Yeh, Head Teacher and Research Coordinator, and Parul Chandra, Head Teacher

Groups of six to eight conference attendees stood at the round tables in the meeting room. On each table rested a 15-foot loop of rope. Following instructions from a handout, attendees spaced themselves around their table and pulled the rope until it was taut. These attendees of the 2017 Professional Learning Institute of the National Association for the Education of Young Children were taking part in an exercise designed to show how children can learn geometric shapes kinesthetically. For example, three people would take equally spaced positions around the loop and pull the rope taut to create an equilateral triangle. The presenter, Linda Platas, an education professor at San Francisco State University, noted that, through guided discussion, children can also learn about attributes such as angle, side and size, as well as two-dimensional figures such as circles and triangles—all the way to octagons, depending on the number of participants.

The conference, held in San Francisco from June 11 to 14, was designed for early childhood professionals, including leaders, program administrators, teachers, and researchers. Approximately 2,000 people attended the institute. Following are highlights of three sessions we attended.

Early Mathematical Learning

Platas’ presentation underscored the importance of early math learning, citing longitudinal research by U.C. Irvine professor Greg Duncan and colleagues, published in 2007, which showed that early math learning plays a vital role in children’s academic success. She introduced the attendees to one especially useful resource for teachers: the Development and Research in Early Math Education network, known as DREME. In 2014, with funding from the Heising-Simons Foundation, a group of 12 top scholars and more than 40 doctoral students and post-doctoral fellows from many disciplines throughout the United States convened the network to advance the field of early mathematics research and improve young children’s opportunities to develop math skills. Deborah Stipek, professor and former dean of the Graduate School of Education at Stanford, chairs the network.

Platas shared DREME’s free, online professional modules for teacher educators in their work with preschool and in-service teachers to promote young children's mathematical learning. These modules are available for teachers at http://prek-math-te.stanford.edu, along with regularly updated content such as articles, handouts, activities and videos. The DREME site is valuable for teachers because it not only demonstrates how children acquire mathematical concepts but also provides a collection of thoughtfully designed, developmentally appropriate, playful learning activities.

Young Children and Technology

At a featured session focused on how young children learn to use technologies through play, Susan Edwards, Professor of Early Childhood Education at Australian Catholic University, cited renowned Russian psychologist Lev Vygotsky’s theory regarding tool use by children to participate in an activity. Vygotsky believed that tools, such as technologies, enabled children’s engagement in activity such as play. He argued that as children mastered a tool, the nature of their activity would also change.

This course of events is also evident, said Edwards, in British psychologist Corrine Hutt’s observations of children encountering a novel instrument. In a 1986 article, Hutt divided children's play into two categories: epistemic (problem-solving, exploration, skill acquisition) and ludic (fantasy, pretend, symbolic and innovative play). She believed that children first engage in epistemic play—trying to figure out how things work—after which they move to ludic play. Hutt described children encountering a novel instrument shaped like a rectangular box with four legs, some knobs on top and a lever-like mechanism. Children first engaged in explorative play to find out about the instrument. After this, the play turned symbolic, with children using their imagination and incorporating the instrument in their own play—for example, pretending it was a rocket ship that could fly to the moon.

Using Vygotsky’s and Hutt’s ideas about tool use and epistemic and ludic play, Edwards and doctoral student Jo Bird developed a new framework to understand how children learn to use technologies through play, said Edwards. They described the framework, which they call the Digital Play Framework, in a 2015 article. The most important idea in the framework, said Edwards, is that children require time to “master” or understand all the affordances of a technology—say, a digital camera or an iPad. This is when children exhibit exploratory indicators, such as seemingly random
“clicking,” rapid snapping of photos and repeated interest in particular apps. Mastery of the tool then leads to more ludic play, in which children might use the tool to create play scenarios or to develop and share images with others. Edwards and Bird published an article this year that shows how adults can use the framework to support children learning to use technologies through play in a way that values exploring how a technology works as highly as using it to create.

In the same session, Tamara Kaldor of the Erikson Institute shared her experience working with children using apps on tablets, and urged adults in similar positions to sit down, observe, allow time and ask reflective questions such as “Can you tell me about what you’re looking at?” She recommends using open-ended apps so children can play an active role. When choosing apps, it’s important to look at what affordances they offer, she said.

Promoting Kindness and Resilience

If there is anything that we wish to change in others, we should first examine it and see whether it is not something that could better be changed in ourselves.

—Carl Jung, 1954

A session on promoting kindness and resilience in turbulent times was presented by a group of very passionate women: Karen Cairone of Education Development Center; Rosemarie Al-

Young Child Expo and Conference

By Jenna Rist, Teacher

Channeling perceived weaknesses into strengths and fighting for dreams were two of the themes of the 14th annual Young Child Expo and Conference, held in May in New York City. The conference was organized by Los Niños Services, which provides services for children with special needs. Approximately 1,400 early childhood professionals, administrators, social workers, parents and others filled workshops and the exposition hall for the four-day event. The first day of the conference was a summit on supporting those with physical and/or learning differences.

Keynote speaker David Rendall, a leadership expert, inspired educators to turn their weaknesses into strengths by finding a positive way of framing such traits or applying them in settings in which they can be helpful. For example, he admitted that he can’t sit still, be quiet or do what he’s told. These seemingly undesirable traits turned out to serve him well as a speaker and an entrepreneur. Rendall encouraged us to think of our uniqueness as strong, sacred and worthwhile. Jeison Aristizábal, CNN’s 2016 Hero of the Year, encouraged attendees to keep dreaming and to fight for those dreams. A Colombian man born with cerebral palsy, Aristizábal and his family went to extraordinary lengths for him to even be able to attend school, let alone receive an advanced education and start a career. He has worked tirelessly for the past 15 years to change how people with disabilities are perceived, and to raise their own feelings of self-worth through his non-prof-
In November 2016, 30 Bing teachers and administrators traveled to downtown Los Angeles for the annual conference of the National Association for the Education of Young Children. The conference, attended each year by thousands of early childhood professionals from the United States, featured over 600 presentations, discussions and events. Attendees were offered myriad opportunities to learn from each other about topics as varied as neurodevelopment, embracing challenging play themes and teaching children with and without disabilities together.

Bing head teacher and research coordinator Chia-wa Yeh and enrollment administrator Katy Jordan presented “Beyond Artistic Expression: Enhancing Brain Development Through Painting.” Through a series of video demonstrations of children painting at the easel, finger painting on tables and participating in other activities, Yeh and Jordan highlighted the important neural connections children make during play that engages different senses, such as sight and touch. Such connections are optimally made through repeated experiences. For example, a child who manipulates clay, finger paint and sand will learn to differentiate the distinct textures and other properties of these materials. Hands-on learning is invaluable as young children make sense of the world around them. Yeh and Jordan shared a video from Jamshid Ghajar, Stanford clinical professor of neurosurgery and former Bing parent. Ghajar stressed that young children need exposure to a wide variety of play experiences, such as painting, climbing and digging, for the motor areas of the brain and the sensory areas in the back part of the brain to interact and synchronize. Ghajar emphasized, “During the first five years of their lives, children have a biological drive to play.”

Yeh and Jordan also discussed the significance of children’s ability to cross their arms and hands over to the opposite side of their body, a movement known as mid-line crossing. Mid-line crossing is critical for children when they develop handedness (a dominant hand), and later, for reading. Children can cross the mid-line in active play in a multitude of ways. For example, children readily reach over to the opposite side of their body when they sweep with a broom, hammer a nail, dig with a shovel or paint at the easel. The presenters urged attendees to consider existing and potential activities in their own program to enhance children’s brain development through painting and play.

Also from Bing, teacher Lars Gustafson and head teachers Colin Johnson and Todd Erikson presented a talk called “Is This Okay? Exploring the Value of Challenging Play Themes.” Johnson delineated three types of challenging play: rough-and-tumble play (such as chasing, tugging and wrestling), play fighting (involving good guys vs. bad guys, superheroes, monsters, animals, etc.) and difficult themes (e.g., good vs. evil and brave vs. scared). Johnson showed a video of a group of children pretending to be buzzing bees on the climbing dome and explained how the child-initiated chase game displayed the invaluable benefits of rough-and-tumble play. Through this play, children learn to build interpersonal connections, self-regulate to maintain the social atmosphere, problem-solve, take different perspectives, create inventive storylines and explore challenging concepts. Children will continue to develop these transferable skills in various areas of their lives to help construct their social competency.

Erikson discussed the importance of developing a strong and meaningful teacher-child relationship in order to support a child’s attempts to take risks in individual and group play. He further maintained that the relationship between the teacher and the family is critical to gaining knowledge about a child and assessing his or her physical and social abilities.

Gustafson closed the talk by providing the audience with guidelines for facilitating these challenging play themes. Some of these include reading body and facial cues, knowing the players involved, setting limits, facilitating conflict resolution and supporting children that are observing the play.

On the final afternoon of the conference, Rusty Keeler, of Planet Earth Playthings, spoke about “Adventure Playgrounds and Anarchy Zones,” offering an unexpected extension of Gustafson, Erikson and Johnson’s presentation. Adventure playgrounds originated in Copenhagen in the aftermath of German occupation. Children began to construct play spaces in the remains of bombed-out buildings. Keeler began his own play-related career as a designer of plastic, modular components for playgrounds. He soon became frustrated by the limited possibilities for open-ended play in such spaces. When a co-worker stumbled upon an article about adventure playgrounds, Keeler was inspired to take action. Keeler co-founded Earthplay, a group that creates spaces—such as the Anarchy Zone in Ithaca, New York—that combine a natu-
Beyond the Binary: Gender Inclusion in Preschool

By Mischa Rosenberg, Teacher

I was caught off guard the first time (of many) when a child asked me, “Are you a boy or a girl?” I think I answered simply, “a girl,” before thinking further about the question. My answers have evolved since then. Now, most frequently, I ask in return, “What do you think?” To this, one child, after a prolonged pause, answered, “I think you’re a girl, but you have short hair.” Later in the morning, she gave me a drawing. “It’s you,” she told me, “but you have long hair and a dress because you’re a girl.” The exchange ended there, but it got me thinking. How do young children come to understand gender? “Boy” and “girl” make for a tidy binary, but what about those that don’t fit neatly into one or the other category?

To begin to explore this question, I attended a teacher training in February 2017 called “Foundations of Gender Inclusive Preschools and Kindergartens.” The course was hosted by Joel Baum, senior director of Gender Spectrum, an organization whose mission is to “create a gender-inclusive world for all children and youth.” Baum began the day by explaining that the term “gender” has long been colloquially used to assign one of two sexes to a person: male or female. However, Baum continued, “gender” in fact consists of three dimensions: people’s biological sex, their gender expression (how they express themselves to the people around them), and their gender identity (their core sense of self). Gender expression and identity do not exist as binaries. They exist along a spectrum. According to the American Academy of Pediatrics, most children are aware of their gender identity pretty early on in childhood. It is during the preschool years that children, overtly and subconsciously, internalize messages about “what boys do” and “what girls do.” This is also when young children can realize that gender is an individual characteristic — part of what makes each person unique.

To be a gender-inclusive school, according to Baum, means to offer a safe space where the unique gender of each child is recognized and supported. All gender expressions and identities are welcome. Educators and caregivers are tasked with the important work of examining their own understanding of and experiences with gender. Baum mentioned a few sample questions for both self-reflection and for starting the conversation with children: Is there only one way to be a boy or girl? Does everyone think of themselves as either a boy or a girl? Can boys and girls like the same things? Do all boys like the same things? Do all girls like the same things?

Situations that enforce gender binaries—whether child-initiated, such as play in which children insist on “no boys allowed,” or adult-initiated, such as a game of Red Rover that has calls of, “If you’re a girl, come over”—can become important teaching moments. At Bing, we strive to create an environment that reflects diversity in all forms, including gender. This is modeled, for example, through books and puzzles that feature men and women in an array of non-stereotypical gender roles, such as female firefighters or stay-at-home dads. There is always more to learn about encouraging diversity and inclusion to help make everyone feel welcomed.
Kindergarten Information Night: Strategies for Smoothing the Transition
By Lara Cardamone, Teacher

At this year’s kindergarten information night, panelists and more than 70 parents came together for a lively, informative discussion about ways to facilitate a smooth transition to kindergarten for children. This year’s panel included pediatrician Rick Lloyd, elementary school principal Mary Bussman, Bing head teachers Nandini Battacharjya and Adrienne Lomangino, and Bing teachers Lauren Matheou and Jenna Rist. Bing head teacher Colin Johnson moderated the event, held Jan. 18.

Rick Lloyd, a father and pediatrician with 40 years of experience, started the evening with an introduction to typical development for kindergarten-aged children. He began by stating, “There is no better age than 5.” He spoke about a 5-year-old’s desire to please, and reminded us that 5-year-olds still believe magic is real, and that their imagination is nearly limitless. For healthy development, children this age still need time to play and engage in self-directed activities, he said.

Lloyd outlined the aspects of kindergarten readiness parents should look for, beginning with the ability to dress independently, wipe after going to the bathroom and brush one’s teeth. By the time a child starts kindergarten, his or her speech should be 100 percent intelligible. They should also be able to label their emotions correctly and to recognize when they are feeling fearful. He said that pediatricians are good resources for parents who have concerns about their child’s development.

Next, Bing head teachers Johnson and Lomangino discussed the experiences of Bing alumni at the beginning of kindergarten, drawing insights from a recent survey. The survey, developed by Lomangino, included responses from the families of 57 of the 120 alumni who began kindergarten in the fall of 2016. The survey asked parents how their children felt about kindergarten before and after they started their programs.

The survey provided information about experiences in 34 different kindergarten programs, both public and independent.

The survey found that most of the children were enthusiastic about kindergarten from the start, and those who weren’t quickly adjusted. According to the survey, before the children started kindergarten: 53 percent were excited about kindergarten, 19 percent were neutral–excited, 12 percent were neutral and 12 percent were reluctant. After attending for six weeks, however, almost 70 percent of the children were excited to be in kindergarten, 25 percent were neutral–excited, and less than 2 percent were reluctant.

What can parents do for children to ease the transition? The panelists provided some pointers:

Lomangino encouraged parents to set realistic expectations for their children, adding that children benefit from the adults in their lives presenting kindergarten in a positive light. It’s also important to avoid overscheduling children. If they’re going from a part-time program to one that is five days a week and has longer sessions, they may not need many extracurricular activities. Making new friends and experiencing a new routine requires a lot of work on a child’s part, so a good amount of sleep and downtime helps.

Talking too much about kindergarten far ahead of time can build up children’s anxiety, said Lomangino, suggesting that parents wait until August to bring up the transition. Most programs have opportunities for the children to visit the school and interact with future classmates over the summer. She recommended making connections with new classmates ahead of time and arranging a play date shortly before kindergarten begins. It is helpful for parents to become involved with the new school during the first year. For example, parents might consider volunteering in their child’s classroom.

Bing’s play-based program facilitates children’s development of emotional resilience, which will benefit them greatly in navigating new routines and new social dynamics. Lloyd stressed that resilience will also come from predictable routines and having a sense of humor. Listen to children’s strong feelings without interrupting, acknowledge these emotions and cuddle, suggested Mary Bussman, principal of Walter Hays Elementary School in Palo Alto.

“Remember, when they come home at the end of the day, what you hear is their interpretation of what happened. Try to see what they are sharing with you from a child’s perspective,” said Lomangino. One way to do this is to role play, Nandini Battacharjya suggested. Pretend to be a child in their class, and let them pretend to be the teacher, she said.

Bing teacher Jenna Rist shared findings from her master’s thesis, which showed...
that play at Bing—using open-ended materials such as blocks, clay, paint, sand and water—provides a sound foundation for building skills in kindergarten and precursors to meeting the State Common Core Standards—a set of skills for students to achieve by the end of each school year in elementary school. For example, children learn about math and science through their play with blocks, rolling balls down gutters and experimenting as they pour water into a beaker until it overflows.

At Bing, the play-based curriculum is full of opportunities for children to gain pre-academic skills that provide the underpinnings for kindergarten success. [See below for more information.]

Principal Bussman said that kindergarten is more academic than it used to be, with more focus on reading, writing and math. Yet it is important to try to cultivate children’s ability to reason and think critically, she said. She encouraged parents to read with their children daily and to discuss their favorite stories with them, as this will help them develop the language skills needed for reading. She discussed how social life is as important for a child as academic life. Ultimately, the most important thing parents can do for their child is to be present, look their child in the eye and have a conversation about the day.

And don’t forget, said Bing’s associate director, Beth Wise, kindergartners still need time to play.

Play-Based Learning in the Common Core Era
By Jenna Rist, Teacher

Play—especially free play—is vital to life and learning, a fact that has been demonstrated anecdotally and through research many times during the last 50 years. In an attempt to increase academic performance in American schools, many classrooms have increased instruction time at the expense of play time. Similarly, direct academic instruction has become more prominent in early learning situations as well. This flies in the face of what many researchers and practitioners know about young children: they learn better when they are self-directed and engaged in play.

At Bing Nursery School, children play with open-ended materials like blocks, clay, paint, sand and water, and while doing so, build foundational skills that they will use in kindergarten to meet the Common Core State Standards, a set of skills students are expected to achieve by the end of each school year. After leaving Bing, most children will be entering school systems that use the Common Core State Standards. What children learn at Bing is a precursor to the more formal academic skills listed in these standards. When we take a close look at what happens in one of Bing’s child-centered, play-based classrooms, we see that meaningful learning and skill building abound.

Through lots of experiences with writing and painting, children acquire literacy skills such as following words from left to right, segmenting syllables in spoken words, and applying phonics skills. Painting allows children to manipulate a paintbrush and use it as a medium for getting their thoughts and ideas out into the world. Children can explore the sensory qualities of paint and later explore the complexity of their own thoughts and ideas, making increasingly advanced representational paintings.

Repeated experience with paint leads to increased intentionality and intricacy as children explore color, lines, shapes, patterns and symmetry. Children also enjoy exploring the paints and brushes as new writing tools, playing with the size and boldness of the paint in writing their names and captions for their work.

When the classroom butterflies came out of their chrysalises this spring, a child felt this was a moment to remember, so he painted one, which he wanted to label. He talked through the sounds with a fellow 5-year-old, explaining, “It’s just a butterfly,” before asking, “How do you spell butterfly?” He and his friend practiced their phonetic and inventive spelling, coming up with “BDRFLI,” which is a typical way children learn to put sounds together to make words.

Through play with water, children learn to describe and compare measurable attributes of objects and classify them into categories. In addition, they participate in collaborative conversations, ask and answer questions, and express thoughts, feelings and ideas. Water lends itself to sensory exploration with the hands and the entire body, as well as to experimentation with properties like temperature, color, pressure and flow.

A 4-year-old made observations about flow when experimenting with water and gutters, saying, “When you pour, the water goes down!” She went on to experiment with bottles and pitchers, not-

A child labels his butterfly painting the way it sounds: BDRFLI.
ing which ones poured for longer, which was her way of determining which ones held more water: the longer they poured, the more water they held. She then sorted the bottles and cups by size and type. Another child explained how to make ice: “Use cold water, put it into the freezer until it’s frozen, then you can put it into a drink and it’s cold and crunchy.” The children also explored the ice teachers had prepared for the water table and tried to melt it using water and salt so the plastic animals inside could “swim” freely.

Playing with blocks provides opportunities for children to make discoveries, act out their ideas, and work with variables including texture, weight and balance, while stretching their cognitive capacities by spurring them to consider measurement and spatial relations. At the same time, it stimulates social and emotional learning when children work together on a project and navigate failures such as when their blocks fall down. Language development and emergent literacy expand with the help of peer collaboration, the making of signs to identify their creations, and storytelling.

Children build math skills, for example, through years of hands-on experience with objects they can manipulate. These beginning understandings of math include one-to-one correspondence, cardinality (the principle that the last number reached while counting is the number of objects in the set) and addition and subtraction. Two 4-year-olds were building together with table blocks when they realized the table blocks were similar to the unit blocks on the carpet. They finished their structure and carefully carried it over to the block area to serve as a model for recreating the structure out of the larger blocks. They counted the blocks used and identified the types of blocks to ensure they matched. Throughout the process they narrated for themselves how many were still needed, such as, “We need six blocks, and we have four. We need two more,” demonstrating an early understanding of addition and subtraction. They repeated this process with increasingly difficult structures.

Sand is a natural, readily available, open-ended material with rich sensorial and tactile properties and nearly unlimited potential. Repeated interactions with sand provide young children with many opportunities to make discoveries, express ideas, test theories and gain important physical, emotional, social and cognitive skills. Children often seek to share and preserve their work by making signs informing others of what they have made and how to use it.

Through their exploration of sand, children learn to use a combination of drawing, dictating and writing to supply information about topics and to narrate events. Several children worked on digging the deepest hole possible. As more children came, some worried that a child could fall into the hole and get hurt, so a 4-year-old ran inside and made a sign, and then said, “I made a hole sign for you. It’s warning people that there’s a big deep hole.” The sign offered a pictorial representation rather than words. This inspired another 4-year-old to make his own sign, saying: “I made a sign for the hole. It says, ‘Don’t go.’ Don’t go in that hole because it’s too deep. You’ll get hurt.” This child used writing to inform others and was beginning to work on narrating an event.

By working with clay, children learn new vocabulary, develop fine motor skills and build muscles in their hands. Children also learn how to solve problems with materials. As children become more comfortable with clay and confident in their abilities, we see their ideas come to life and see small groups working together to replicate objects and experiences in their lives.

Clay provides children with opportunities to model shapes they see in the world, as well as to describe them, provide additional detail, and add visual displays to supplement their description. A 4-year-old had been struggling to draw and cut heart shapes, but clay allowed her to iterate until she got the shape just the way she wanted it without getting frustrated about unsatisfactory outcomes. Clay and most of our other basic materials emphasize the process, allowing learning to happen in its own time. The child knew how she wanted the heart to look and was able to describe it in great detail. Once she shaped the clay into a solid heart that she was happy with, she decided to display her ideas in yet another way, creating the outline of a heart.

When given the time, space and materials to explore, children will seek out learning opportunities and advance their literacy and mathematical thinking skills independently. They are motivated to solve problems and make discoveries. These examples show children’s capacity for advanced thinking and reasoning when their exploration is supported by a teacher and extended through repeated experiences with the same materials. Basic materials like blocks, clay, paint, sand and water allow children to do so much more than just play. They are learning and growing in ways we typically don’t even notice because it’s happening so naturally. Play and learning are not mutually exclusive activities, especially not in young children. Nurturing a playful and curious spirit in a child leads to natural, relevant and remembered learning, setting a child up for success in kindergarten and elementary school with the Common Core and beyond.
Music at Bing
By Beth Wise, Associate Director

Bing Nursery School Performance Series presented a feast of musical experiences for the 2016-17 school year. It began Oct. 22, 2016, with a performance of “Green Eggs and Hamadeus,” an original production by acclaimed conductor Rob Kapilow, host of the NPR series “What Makes It Great.” It featured Kapilow, the St. Lawrence String Quartet, Stanford chamber music students, vocalist Claire Kuttler and actor Hayden Wall, with two sold-out performances at Stanford’s Dinkelspiel Auditorium. At a February 4, 2017 performance at the Pan-Asian Music Festival, held at the Bing Concert Hall, we co-presented “A Celebration of Music from Iran: Family Concert: Singing, Drumming & Dancing from Iran.” The performance introduced families to amazing performing arts traditions that included dancers Shahrokh Moshkin Ghalam and Sahar Dehghan, and the Zagros Trio Ensemble musicians. We concluded the series on May 27 with a free concert by the award-winning and highly captivating singer-songwriter of children’s music, Raffi, made possible by anonymous donors. With many of the parents also growing up listening to Raffi’s melodious songs, it was an especially touching and engaging event for the whole family. The performance series concerts are open to the community, with transportation sponsored by former Bing parent Rita Whitney, and complimentary tickets offered to over 250 children annually from surrounding communities who may not otherwise be able to attend.

At Bing, children are not only exposed to music and dance in the classroom and during special events, but often create their own songs and melodies as they move through the environment with their peers. On a day-to-day, week-by-week basis, teachers also fill the day with songs, story plays, music times and spontaneous melodies that arise when working with children. As part of Bing’s tradition of music making, we had several in-house performances with staff and parents as the main performers.

Our music specialist, Leslie Hart, arranged a musical afternoon in November by bringing her brass quintet, “Emerald Brass Quintet,” to perform on the Center Room lawn for the afternoon classes. In April, Hart also invited Christopher Azzara, an internationally renowned music teaching and learning scholar from the Eastman School of Music at the University of Rochester, to visit and meet with staff for lunch to discuss musical ideas and his observations of the school. The day culminated with a school sing-along in the atrium led by me, Azzara, Hart and her husband, Dave Hart, a musician and music teacher at Harker School in San Jose.

We ended our school year in June with an evening concert and sing-along on the Center Room lawn, organized by Hart and me. Parents brought blankets and picnics, and children were excited to join their peers for an evening of music. The band was composed of staff and Bing family members past and present as well as several local musicians. Music is a constant in our lives and a powerful way to unite the community in rhythm and song!
Bing Children’s Fair 2017
By Sandi Gedeon, Business Manager

On Sunday, May 21, 2017, 600 families of Bing Nursery School children—current and alumni—spent the day at the school enjoying the annual Bing Children’s Fair. Fairgoers were entertained by the Mariachi Cardenal de Stanford and singer-songwriter Fred McCarthy. The incomparable Leland Stanford Junior University Marching Band closed the fair and was a huge hit with children and adults.

Over 200 parents prepared goods for the bake sale and the food booths. Cupcakes, brownies and sweets of all kinds were popular, and nobody could pass up the delicious variety of food, from American macaroni and cheese to Mexican tacos. In addition, many businesses made donations, including food and volunteers to help staff the fair, as well as cash. Special thanks to our generous donors: Bird Dog, California Pizza Kitchen, Cheesecake Factory, Costco, DAVIDsTEA, Ahmed and Elizabeth Fattouh, Fraiche, Gerry’s Cakes, GNT Group, Kathy’s Kreative Kakes, La Baguette, Lulu’s, Peet’s Coffee & Tea, Pizza My Heart, Adriana Flores-Ragade and Dhananjay Ragade, SIGNALFIRE, Sigona’s Farmers Market, SusieCakes, TaskRabbit, Tin Pot Creamery, Delney and James Walker and many Stanford sororities and fraternities.

On the morning of the fair, approximately 200 alumni families joined the Bing staff for breakfast. It was wonderful to see and talk with so many alumni children, as well as their parents, some of whom are Bing alumni themselves.

We would like to thank our Bing Fair co-chairs, Chandan Allen, Dorothy An, Adriana Flores-Ragade, Patama Gur and Kristin Vogelsong, for organizing a beautiful fair, as well as the over 300 parent volunteers. Proceeds from the fair benefit the Bing Nursery School Scholarship Fund.

FAIR CO-CHAIRS: Chandan Allen, Dorothy An, Adriana Flores-Ragade, Patama Gur, Kristin Vogelsong

ACTIVITY CHAIRS: Ticket Sales at Alumni Breakfast: Melissa Gibson • Bake Sale: Alexandria Boehm, Caroline Keirsey • Baseball Toss: Hal Morris • Bean Bag Toss: Odelia Blankroth • Cake Walk: Dhananjay Ragade • Challenge Course: Ivanna Clark • Clean-Up: Fatima Saqib • Cookie Painting: Lindsay Louie, Catherine Ross Stoll • Duck Pond: Cindy Dodd • Easel Painting: Fusun Ertemalp • Face Painting: Coral Chung • Finance/Ticket Sales: Eric Klinker • Fishing Hole: Krassi Harwell, Melissa Miranda • Frozen Fruit Bars: Jean Tang • Handprints: Melissa Nunez • International/American Foods: Marta Gwiazdowska-Kowalska, Maddy Elles-Hill, Denis Anscomb • International/American Foods Kitchen: Ele Mamayek • International/American Foods Pick-Up: Eric Klinker • Pizza Booth: Jamal Clark • Sand Castles: Nadia Gazor • Saturday Set-Up: Ivanna Clark • Scavenger Hunt: Jennifer Yeh • Spirit Shop: Michelle Hug • Sunday Set-Up: Karina Etminani • Treasure Bags: Janice Chan • Volunteer Table: Emily Lopez • Waterworks: Jennifer Yu • Wood Gluing: Corinne Bright
On November 19, 2016, guests entered a wonderland to celebrate Bing Nursery School’s 28th annual Harvest Moon auction, “Through the Looking Glass.” The annual fundraising event, held this year at Stanford’s Arrillaga Alumni Center, raised $300,000 for the Bing Scholarship Fund, which provides financial assistance to over 20 percent of the children who attend Bing. As in past years, Helen and Peter Bing were strong supporters, with a generous gift of $50,000.

Guests were greeted by an “Alice in Wonderland” theme, including colorful flowers, playing cards, top hats, “Queen of Hearts” cocktails and beautiful red and white décor. They came dressed in their best “Queen of Hearts” costumes and “Mad Hatter” hats.

Over 600 exciting items were up for bid at the silent auction, and over 100 items were sold through our online auction, where we raised over $14,000. Professional auctioneer Jerry Goldstone took the stage, as well as Bing teachers Todd Erickson and Lars Gustafson, who were this year’s emcees. The live auction raised over $40,000 and included VIP courtside this year’s emcees. The live auction raised over $40,000 and included VIP courtside tickets to a Warriors game, tickets to the Broadway musical Hamilton and a beautiful clock table created by Bing’s resident carpenter, Gene Aiken, which sold for an incredible $10,000.

The ever-popular Fund a Scholarship, a live bidding item with straight cash donations going directly to the Bing Scholarship Fund, raised over $43,000 that evening, with an additional $110,000 raised prior to the auction.

More than 35 events for children, families and adults were also auctioned off, including a Mad Hatter Tea Party, Around the World in 80 Sips and a Bug-Out Party. We appreciate the work and donations of each classroom’s parents, who put together over 50 class baskets with themes including “White Rabbit’s Tea Party” and “Goodnight, Goodnight Construction Site.”

The food, catered again this year by Weir & Associates Catering, featured “Mad Hatter” tea sandwiches and cheese and roasted tomato quiche. SusieCakes, Tin Pot Creamery and Peet’s Coffee & Tea donated the dessert and coffee for the evening. Other generous donors for the evening included Hal Morris and Alyssa Rapp (who graciously provided all the wine for drinking at the auction), TaskRabbit, Hengehold Trucks, Balsam Hill, Trader Joe’s, Rick Herns Productions and DJ Golden Arms. Many Bing families and businesses were sponsors or purchased ad space in our auction catalog. Families included the Actons, the Bischofs and Kevin Lynch and Margaret Carlson Lynch. Businesses included Bay Area Insurance, Brady Avenue, Chris and Kelly Homes, FuelPanda, Kumon Math and Reading Center of East Palo Alto - Ravenswood, Ladera Garden and Gifts, Lindsy Martin Interior Design, Little Bytes Pediatric Dentistry, Littlelane, McKenna Family Dentistry, Patty Brady Interiors, Rose Insurance Group, Service by Medallion and The Village Doctor.

A big thank-you goes out to our auction co-chairs, Adriana Flores-Ragade, Margarita Golod and Meredith Zappert, for their vision, leadership and dedication. We couldn’t have done it without them. We are also extremely grateful to our parent volunteers—over 200 strong—who worked on over 20 committees. A special thank-you to those who donated to the auction and to those who attended. The tremendous dedication of our parents, Bing teachers and staff made the auction what it was—a tremendous success!

Please join us at this year’s auction, Saturday, Nov. 11, 2017.
THE BING NURSERY SCHOOL
29TH ANNUAL HARVEST MOON AUCTION

Venice at Midnight

SATURDAY, NOVEMBER 11TH, 2017 AT 6:30 PM
AT THE FRANCES C. ARRILLAGA ALUMNI CENTER
326 GALVEZ STREET, STANFORD UNIVERSITY CAMPUS

Bask in the Venetian moonlight and celebrate the evening with fine food, antipasti, cocktails, tiramisu and exciting live and silent auction items.

All proceeds benefit the Bing Nursery School Scholarship Fund.

Please visit us at bingschool.stanford.edu/hm for reservations and more information, or contact us at harvestmoon@stanford.edu, 650-723-4865.

Grazie Mille

Gilda Foss, Margarita Golod, and Melissa Miranda
2017 Harvest Moon Auction Co-Chairs

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