Chapter 9

Play:
The Crucible of Learning

Marianne Myers, a supervisor for a megasize office supply store, crunches on a piece of toast and scrutinizes the big calendar anchored by magnets to the refrigerator. Her husband, Dennis, a landscaper, gulps his orange juice and heads for the door. “I know! I’ll take a late lunch, pick her up at 3, and take her to Gymboree. It’s okay. I’ve got it covered,” Dennis says.

“And then . . .” Marianne prompts. She wants to write it out for him because last week he brought Alyson home after Gymboree instead of to the birthday party at Ginny Rymer’s house. And their time at home was completely unproductive. Alyson just played with her stuffed animals. And despite her repeated requests, Dennis didn’t join in her fantasy play, thinking that she was doing just fine on her own. Instead, he tried to catch up on his work.

“And then . . .” Dennis hesitates, hoping he does have it right today.

“. . . to Mrs. Majors.”

“No, dear,” Marianne says as gently as she can. “We had to switch her violin class to today because of the trip to the zoo tomorrow. I know it’s hard to keep it all straight. Yesterday, to tell you the truth, I took her to her art class thinking it was Thursday!”

“Oh. Right. Okay, I got it.” Dennis sighs and heads for his truck. Some
days, caring for trees and shrubs seems like a form of relaxation compared with caring for children. He wonders how they manage this complex organization.

While her parents have been conscientiously scheduling every free moment she has with structured, “enriching” activities, 4-year-old Alyson converses with several stuffed animals in the open dining area. She sits on the floor in front of the TV, glancing occasionally at Barney, who presents a little lesson on being nice. She is engrossed in her stuffed animals, having used blocks to make a castle and about to enact a scenario. She picks up a Beanie Baby kitty. “Okay—you be duch pwincess.” Then she makes her big teddy bear take giant, crashing steps toward the “pwincess.” The pwincess holds her own against the teddy bear, however, and despite her diminutive size, tells the bear to “Weave my casool” (translation: “Leave my castle!”). The pwincess pokes at him repeatedly as the bear backs up in a hasty retreat. As Alyson makes the bear retreat, she accidentally knocks over some blocks that were serving as the castle, causing a loud noise as they crash to the ground. Alyson jumps and her mother, startled, says, “Alyson! What are you doing?”

And that’s the interesting question. Alyson is playing—but what, exactly, does that mean?

What’s the point of play?

Marianne and Dennis, like many parents today, have gotten caught up in the false belief that free play is unimportant or even a waste of time—that children aren’t learning anything when they are “just” playing. But playful moments are really learning opportunities in disguise. The evidence is very clear. Play promotes development—and in a number of domains. For instance, play promotes problem solving and creativity. It also helps to build better attention spans and encourages social development. But how could play have all these—and other—benefits? Join us as we investigate the wonders of play.

Felix, age 4, and Minerva, age 5, were among the children in a (now classic) study. Before them, but quite out of reach, was a see-through latched box. And in that box lay the jewel in this experiment: a piece of colored chalk or a marble that the children had previously chosen as a neat toy. The task before the children was simple, yet seemingly impossible: to retrieve the toy without getting out of their seats or even leaning toward the box. How could the children get the chalk out of the box?

There was an actual solution, which involved connecting two long sticks that together were long enough to reach the box and rake it in.

Felix and Minerva were in the group assigned to play freely with the sticks. Even before they were given the task of retrieving the chalk, even before they were asked to choose the chalk or the marble, they were given a bunch of small sticks of different sizes to play with and no particular instructions for about 10 minutes. As children are wont to do, they explored the sticks and played a little make-believe, making the sticks into soldiers. They even discovered that some of the sticks could fit inside one another to make longer sticks. Just as their interest in the sticks started to wane, Felix and Minerva chose the chalk and were given the box retrieval task.

Did Felix and Minerva just sit there waiting for the researcher to give them a solution? Did they just bang the sticks together or dig them into the carpet? Well, maybe a little. They were silent for a moment as they looked at the precious chalk so near and yet so far. Then they reminded themselves of the rules of the game. Felix: “She says we can’t stand up.” Minerva: “Yeah, but . . . maybe the sticks . . .” And then they were off, figuring out which sticks could clump together and then looking for the longest ones that would clump together. They tackled the problem with great exuberance and with serious intensity. Finally, these little detectives found the two longest sticks, clamped them together, reached the box, and raked the prize box to them. They solved the problem. Bravo!

Other pairs of children were not given the sticks to play with in advance but just given the answer to the problem right off the bat. They watched in silence as the researcher showed them how to solve it by putting two of the sticks together. Then she left them alone with the problem, and with the same sticks Felix and Minerva had used, to see how they would solve the problem. Some of the children solved the problem instantly. After all, they had seen the experimenter solve the problem. But other children sometimes failed. And when they failed, they instantly gave up. Finally, a third group of children were given no time to play with the sticks and never saw the experimenter solve the problem. Not surprisingly, nearly all of these children failed the task.

What does this experiment and others like it tell us? Self-guided ex-
exploration through play is a learning experience that "teaches" problem solving in a fun way. Sure, some of the children who were shown the solution by an adult immediately got it right. But when they failed, they gave up. It was as if they thought, "That lady knows how to do it and I don't. Period." Children like Felix and Minerva, however, who played with the sticks before they were given the task, worked very persistently and eagerly to solve the problem. Researchers have discovered that play is related to greater creativity and imagination and even to higher reading levels and IQ scores. Based on the research evidence, a new equation is in order: PLAY = LEARNING.

WHEN PARENTS JOIN IN THE FUN

Research has proven another interesting fact about play: The level of children's play rises when adults play with them. The variety of play children engage in also increases when adults join in. And "joining in" is different from controlling. Controlling makes children follow their parents' agenda and does not lead to as much cognitive development as when parents follow their children's lead.

Imagine Khara, a brown-eyed 22-month-old. She and her mother, Maxine, have been invited to Professor Barbara Fiese's lab at Syracuse University to participate in a study on play. The researchers videotape what takes place so that they can code it later for the behaviors they are interested in studying. First, they ask Maxine to fill out a questionnaire about Khara's play habits while they watch how Khara plays alone with the toys that are available. Then they ask Maxine to get on the floor with Khara and play with her as she might at home. After that, they ask Maxine to show Khara how to do various make-believe things, like pretending to brush a doll's teeth. Finally, they observe Maxine and Khara as they play with each other without any instructions.

In this experiment, Professor Fiese was following up on other studies that showed that children are more likely to treat objects not as the real objects they are but as symbols for other objects when they played with adults (here their mothers). When that block is used like a car and made to move along the floor with a "vroom, vroom, vroom," we know that the child recognizes that things can stand for other things in the world. What's the big deal? One of the key components of development is learning to manipulate symbols and reason abstractly. After all, what is language but symbol manipulation? The sounds of words (take "chair") in no way resemble what they stand for (a real chair). And children need to think beyond the objects that are concretely in front of them if they are to combine new ideas in creative ways. Treating objects as though they were something else is the beginning of that important ability. And being able to use objects symbolically, to stand for something other than what they really are, is related to children's language progress.

Professor Fiese evaluated the complexity of Khara's play by considering whether the things she did were just exploratory (touching, looking at), functional (moving a little car in the expected way), or symbolic (from pretending to drink from an empty cup to make-believe pouring and then drinking, to setting up a make-believe dinner scenario). When Khara played by herself, she looked the least advanced. When her mother joined in, she looked more advanced, and when Maxine showed Khara how to make believe (like pretending to brush a doll's teeth), Khara played in the most complex way. Maxine's involvement with Khara's play helped her move to another level, a level that will promote richer and more abstract thinking.

Interestingly, mothers who just asked a lot of questions of their children, who watched a lot, and who tried to direct the play rather than joining in had children who engaged in less symbolic play and more exploratory play. When children—as in Khara's case—are allowed to take the lead, the result is more advanced play. So the next time you assume that your child is doing fine playing on her own, remember that your presence makes a difference. This is not to say that solitary play is a bad idea. Not at all. But you are not intruding if you play with your child; in fact, without even realizing it, you are probably helping your child learn to manipulate symbols and think more abstractly.

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You can recreate Professor Fiese's experiment at home, but you'll need to recruit another parent or caregiver so that you can watch your child's actions closely. First, get some new toys and let the child play on her own with them while your willing helper (who should not, by the way, know
what it is you are looking for) pretends to read a magazine. Observe your child for about 8 minutes, seeing what she does with the new toys. Have your helper resist the child’s entreaties to join in by saying, “In a minute.” Does your child explore the toys first? Does your child begin to play make-believe with the objects, acting as if they were something different than what they really are? Can you see your child treating these objects in a symbolic way? Then have your helper join in. After they play for a while, try to see if the play shifts into make-believe. Then give your helper a piece of paper with two make-believe things to try with your child, such as pretending to set up a tea party. Does the child’s level of play increase yet again? It’s as if you can watch your child’s mental processes stretching before your eyes as she interacts with an adult who gently guides her in the use of symbols. Play with adults clearly matters for cognitive growth.

Play 101

Play is an elusive concept. As Janet Moyle’s says in her book, The Excellence of Play, “Grappling with the concepts of play can be analogized to trying to seize bubbles, for every time there appears to be something to hold on to, its ephemeral nature disallows it being grasped.” A 12-month-old child who is banging pots together in the kitchen is playing. An 18-month-old who is practicing all the words he knows out loud before a nap in his crib is playing. A 4-year-old who is on his first soccer team is playing. And a 5-year-old who is engaging in an elaborate fantasy game with a friend is also playing. So what is the common thread? When 500 teachers were asked to define play, there were as many responses as there were teachers! It’s interesting, isn’t it, that the most familiar words are sometimes the hardest to define.

According to prominent researchers, such as Professor Catherine Garvey of the University of Maine and Professor Kenneth Rubin of the University of Maryland, play has five elements. First, play must be pleasurable and enjoyable. This doesn’t mean that you have to be falling on the ground in paroxysms of laughter to be playing. But it must be fun. Second, play must have no extrinsic goals. You don’t go into play saying something like “Hmm, I think I’ll play now so that I can get some pre-reading skills.”
The same is true for the classes we enroll our young children in. Are we hoping that they’ll have a good time in these classes and play with other children, or do we have in the back of our minds that by exposing them to (fill in the blank) we might develop some latent talent? When our 5-year-olds are added to the Little League baseball roster, do we really just want them to have fun? Do we think that it will be great for them to learn some new skills, like catching a ball with a glove, that will add to their further pleasure? Or are we hoping that they will make the play-offs and even win? As one father of a child who began drilling his 4-year-old son for a career in athletics said, “At times, I admit, I have behaved obnoxiously and without sufficient regard for the feelings of my children.” Parental brawls at children’s sporting events have become legion. These examples raise interesting questions about whether we really are letting our children play when we schedule them into organized activities.

A reporter recently posed the following question to one of us: “The activities parents sign their children up for sound like fun. Why is free play of the sort you describe necessary at all?” The answer? It is through free play that children learn not only to have fun with children in organized activities, but also to create activities themselves. They learn initiative. As Susan Bredekamp, Ph.D., of the National Association for the Education of Young Children writes, “Children will feel successful when they engage in a task that they have defined for themselves.” It is not considered developmentally appropriate for teachers to use “highly structured, teacher-directed lessons almost exclusively, . . . deciding what the children will do and when while expecting the children to listen passively or do pencil and paper tasks for long periods of time.” Sound ghastly? To us it does. More and more parents, however, want their preschools to have this complexion. And we have visited the preschools that offer “computer science” and “mathematics instruction.” Children may look busy, but the question is, what are they sacrificing in the bargain?

Academic preschools that emphasize learning over play have become popular because parents want to make sure their children get a leg up in life. Life is tough; no question about it. But it’s just not true that the best kind of learning takes place only when a big, smart adult directs the child’s every move. And it’s also not true that children who attend academically oriented preschools enter school with better skills and better attitudes toward learning. Years of research have shown that children need to direct their own play activities. When children have a chance to play, they show an increase in creativity and problem solving.

Now we get to another central function of play: It gives children a sense of power. And for people who are being told what to do every minute of the day, having a sense of power is not only delightful, it’s instructive. In free play, children get to practice being in charge—buffered from any real-life consequences. It is through free play that the child becomes the boss in a real or imagined world, independently navigating through the choices available to him. It is through play that a child can invent something new or solve a problem that arises for the dinosaurs that are often stand-ins for real people. While organized activities have their place, we must not mistake them for play. It is play, plain and simple play, that affords many of the most essential intellectual and social advantages for children. As Yale professor and noted researcher Dorothy Singer says, “Through make-believe games children can be anyone they wish and go anywhere they want. When they engage in sociodramatic play, they learn how to cope with feelings, how to bring the large, confusing world into a small, manageable size; and how to become socially adept as they share, take turns, and cooperate with each other. When children play, they are learning new words, how to problem solve, and how to be flexible. Most of all, they are just plain having fun.”

**Why a Lack of Play Can Be Harmful**

Is too little play a problem for children? Some experts argue that “play deprivation” can lead to depression and hostility in children. After all, if you never had a break, you might get depressed, too! And consider how much more your children are dealing with in trying to understand their world. While you may not feel like it on some days, you are in control. Conversely, your children have very little control over what happens. Your children need breaks—breaks to assimilate things they’ve already learned, to master new skills, to work through scary emotional experiences, and just to have fun! The best data on too little play comes from studies with animals because it isn’t ethical to do experiments in which you deprive children of play. What happens when animals are deprived of play?

Some recent research suggests that depriving animals of play may have
negative effects on their brains. Work with rats by Jaak Panksepp, emeritus professor at Bowling Green University in Ohio, suggests that play has an effect on the frontal lobe, the part of the brain that houses self-control. Without play, Professor Panksepp and his student Nikki Gordon found, there were delays in the brain's maturation. When rats that already had frontal lobe damage were allowed to play, some of the damage repaired itself. Damage to the frontal lobe is considered an analogue to what children have when they suffer from attention deficit disorder (ADD). If rough-and-tumble play helps rats to be less hyper, perhaps this would also be true for children. Indeed, researchers who work with children are finding similar effects. Rough-and-tumble play may help children with ADD control their impulsivity and concentrate in school.

We already know, too, from the work of Professor Anthony Pellegrini at the University of Minnesota that providing school-age children with play breaks maximizes their attention to school tasks that involve thinking. Consider the fact that schools are increasingly eliminating opportunities for play. As Professor Pellegrini says, such a move would be "misguided and may actually do harm."

WHY PLAY IS EVEN MORE IMPORTANT IN THE 21ST CENTURY

Through our years of research, we have come to the conclusion that play is to early childhood what gas is to a car. It is the very fuel of every intellectual activity that our children engage in. Researchers are in universal agreement that play provides a strong foundation for intellectual growth, creativity, and problem solving. And it also serves as a vehicle for emotional development, and for the development of essential social skills. In the 21st century, creative problem solvers, independent thinkers, and people with expert social acumen will inevitably surpass those who have simply learned to be efficient at getting the right answers. Encyclopedic information is already abundantly available at our fingertips. If you know how to read, and own a computer, and you know how to use a service like Google, you can get answers to nearly any question you might have. Although the new movement in education called high-stakes testing functions as if right answers were what matter, the truly creative—the individuals who make the most significant contributions—go beyond finding answers to already formulated problems. How do these individuals practice asking new questions and deriving new answers? Through play. Play builds versatile and supple intellectual skills; play is the place where problem solving comes alive. But then, play is not just a concept for our time. Einstein knew the value of play all along when he said, "... Play seems to be the essential feature in productive scientific thought—before there is any connection with logical construction in words or other kinds of signs that can be communicated to others."

The pervasive myth in our achievement-oriented society that child's play is a waste of time is linked to the hype that parents must boost their children's intelligence. So we overschedule our children and give up on the values that we know, deep down, are important. Intelligence gets a big boost from play, yet the idea that enhancing a child's intelligence must be work has become the new gospel.

Despite the fact that the amount of time children spend in free play has been steadily decreasing since the 1980s, parents universally seem to understand the value of play. In a survey conducted in 2000 by Zero to Three, a research group at Harvard University, 87 percent of parents of 3- to 5-year-olds agreed that play was important for healthy development. Parents even know which types of play are most beneficial for children. In the survey, they rated certain activities—banging on blocks (at 6 months), having a pretend tea party (at 2 years), making art with art supplies (at 4 years), and playing cards with dad (at 6 years)—as maximally stimulating. Activities like playing on the computer (at age 2), making art on the computer (at age 4), and memorizing flash cards (at age 4) were considered less important for optimal growth. The survey showed that parents and researchers see eye to eye. These numbers, when viewed against the backdrop of diminishing playtime, present a travesty. We know what to do, but we just can't bring ourselves to do it. We are afraid that if we trust our instincts, our children will be missing out on learning some critical skills. Francis, mother of 3-year-old Rebecca, puts it best: "If she is just playing, she might be wasting precious moments when she could be learning. I don't want to hold my child back. How will I feel when all of the other kids are ahead of my child? How will Rebecca feel about herself if I let her fall behind?"

Yet as we hope you are beginning to see, free play and guided play hold the key to more fulfilling lives—not only for children but for parents as well. Play is the key to nurturing happy, intelligent children.
Before we consider more of the evidence about what play means and how important it is for children’s lives, we need to take a quick peek at children of different ages who are playing. Why? Because play is different at different ages. Just as we as adults no longer play in the bathtub with boats and cups, our young children are incapable of playing Scrabble or Boggle or other word games that interest us. Play has different complexities at 12 months, 2 years, and 4 years of age. Play, as a reflection of children’s minds, develops and grows in complexity, too.

**How Do Children Play?**

Babies engage in play as early as 3 to 6 months—as soon as they are able to grasp objects. Babies this age are perfectly content to use almost any object as a toy, whether it’s a crumpled piece of paper, a shoe, or even a dollar bill!

Let’s watch Carol, a 9-month-old with strawberry blonde hair, as she sits on the floor playing with a 10-inch-long pink hollow plastic hammer. She studies it with great intensity for a moment, as if to memorize its features, and runs the fingers of one hand along its curves and turns it in her hand. She then studies it again and winds up bringing it to her mouth to explore it. She pulls it out, makes a face (must not taste great), and shakes it up and down, perhaps hoping for a noise (maybe it’s a rattle?), when she thrashes it by accident against a cylindrical metal can that holds her other toys. Bam! Wow, that caught her interest! She thrashes it wildly again and is fascinated to hear what she has wrought. Now, more and more purposefully, she raps the can with the hammer, not as we hold a hammer, but on its side, jumping a little each time with delight as she creates a spectacle, all on her own!

Infants between 6 and 9 months are just starting to do this kind of intense object exploration. In fact, psychologist Holly Ruff at Albert Einstein College in New York City found that babies around this age start to change how they handle an object according to the object’s properties. The older they get, the less they engage in indiscriminate mouthing and looking no matter what the object is. Prior to this time, Carol would have just transferred the object from hand to hand and not rotated it and studied it and looked at it from different angles. Carol is just starting to create relations between objects—although now it’s by accident, as when she hit the can in a random thrashing of her arm. The late Swiss psychologist Jean Piaget, one of the founding fathers of child development, suggested that in infancy, children engage in the purest form of play. They make objects they find interesting fit into their world. They largely play with objects one at a time, and they use objects only in the simplest of ways—never creating uses beyond those intended by the maker.

Now look at Carol at about 23 months, a mere 14 months later. Carol is sitting on the floor of the kitchen, surrounded by the toys she has dumped out of the can we saw before. She picks up a toy telephone and fingers the buttons carefully for a while, trying to push them to hear their binging noise. After pushing a few buttons, she holds the receiver up to her ear (okay, maybe she licks it a little before she brings it to her ear) and tries the push buttons again. She becomes bored of this and sees the hammer she used in the last episode we described. She becomes bored the phone, picks up the hammer—holding it correctly now—and bangs on the buttons on the phone with some force. This looks premeditated and involved planning. It was as if she thought, “That hammer could make a lot more keys sound than my one finger has been able to!” Occasionally (her aim isn’t wonderful), she is rewarded with the binging noise the buttons make. Next to her on the floor is baby, a soft doll with a plastic face, wearing blue pajamas. Periodically as she plays, Carol picks up her baby and lays it back down and covers it up with her own blankie. The blanket is what psychologists call Carol’s “transitional object,” and it has helped her through a lot of tough times.

Quite a lot has changed in Carol’s play, compared with when she was 9 months old. Professor Fergus Hughes, an expert on child’s play from the University of Wisconsin in Green Bay, points out three ways in which play in the 2nd year of life changes. The first big change is seen in the way Carol now uses the hammer on the phone. One of the hallmarks of the advancement of play is the decrease in using objects one at a time and the increase in using them two or three at a time. Now Carol creates relations between objects, which is a much more sophisticated way to use them.

Remember how Carol used the hammer when she was 9 months old? She didn’t hold it by the handle and bang on the can with its head, as we might. Instead, she rapped its side against the can. By 23 months, Carol uses the hammer like a pro. The second way that play changes with age is that children start using objects in appropriate ways. And Carol seems to
understand how a telephone works, too, even though adults don't usually
lick it before they dial (we promise she won't be licking the phone by the
time she goes to college). So Carol's experience with objects in the
world—whether through observation of others or her own use—allows
her to use objects as they were meant to be used.

When Carol picks her baby up to cuddle it as if it were real and covers
it up as if it were cold, she's showing us that she is using her imagination.
She no longer has to deal just in the here and now. She can pretend that
things are alive; she can pretend that they are real. This third change in play
is the one that most captures the imagination and interest of researchers.
It certainly captured the attention of Professor Piaget. He realized that
when children engage in pretend play, they demonstrate that they have
reached a developmental milestone. They are now able to think symboli-
cally—to have one object stand for another. The use of symbols is the main
characteristic of human thought that makes us distinct from other animals.
This is the stuff from which language, reading, problem solving, and other
types of higher-order thinking are made. Humans all over the world,
whether they are raised in a hut or a high-rise, think in terms of symbols.

In our final vignette, Carol is now 3½ years old. Her taste in toys has
changed, and we no longer see the same ones as before. Now there are
coloring books and picture books and a toy farm set with miniature ani-
mals. That little pink plastic hammer is still around, and there's also an
obsolete cell phone on the floor. We peek in on Carol as she lies on her
stomach, moving the animals around in the farmyard as she quietly talks
to herself. As she walks the miniature cow slowly back to the barn, she
says, "Okay, cow, now you go back to the barn and go to sleep because
it's getting dark outside. You'll need your baby doll to fall asleep, so we
have to look for it." As she looks around for the cow's baby doll, she
comes up dry (what a surprise). But instead she spits that cell phone. She
says, "Oh, here's your baby doll. Her name is Lulu." She "parks" the cow
in her stall, laying her on her side and placing the cell phone next to the
outstretched cow's feet. "Night night," she says as she covers the cow and
its cell-phone baby with the old pink plastic hammer.

Pretend play like this increases dramatically in the 4th year of life as
children become the master directors in their play scenarios. And as Carol
gets older, her play scenarios—especially with a parent or a peer—will
become even more complex, and they'll tell whole stories, just like in

their picture books. Whether or not your child turns out to be a film di-
rector, the creation of these scenes, in which inanimate objects are given
functions that are very different from what they were intended for by
their creators, is a very special play advancement. A cell phone has be-
come a baby doll and a hammer has become a cover. This is progress.
Why? Because Carol is no longer tied to the features of the props. She
can treat them as if they were something else. This is exactly what takes
place in generating ideas, in thinking a problem through. We think as if
other conditions apply and circumstances can be changed, and then we
come up with a new idea or a novel solution. So pretend play is practice
for children in freeing themselves from what is right in front of their eyes.
Pretend play allows children to consider answers outside the box. Pretend
play allows our children to consider alternative worlds.

Notice what has happened across the three vignettes of Carol at play.
She moved from treating all objects the same way (usually mouthing
them) to treating them differently and exploring their properties. Then
she treated each object differently and realistically, according to what they
do in the real world (as when Carol finally held the hammer the right
way and used it in a conventional manner). Finally, Carol treated objects
as symbols or things that stand for other things (as when Carol used the
cell phone to stand for a baby doll).

Now that we have painted a broad-brush picture of the changes you
are likely to see in your children's play if you look closely, we need to ask
what these changes mean. We have already hinted at the benefits of play
and what about it is so important for children's development. But we
need to dig a little more deeply, to talk about the different kinds of play
(all of our examples were of solitary, object play), the emotional benefits
of play, and what parents and caregivers contribute to children's play. That's
what we'll do next—but in a playful way (of course!).

**Does Play with Objects Benefit Intellectual Development?**

The solitary object play and exploration we've just described in the vi-
gnettes above provides children with their first understandings of the way
the world works. It's their chance to do their own little experiments and
figure out what objects can do and what they can't. These are things that
they have to figure out firsthand for themselves; there is only so much that can be learned by watching others manipulate objects.

Children are exploring the world of objects and substances. They are little scientists—testing out the properties of physical matter. Even as babies, they are doing little experiments: "What happens when I let go of my rattle? Look! It goes down to the floor. Look! It does it again! Does it do it every time? Let's see." When our 2-year-olds bang on pots, they learn about the relationship between the force they exert and the loudness of the sound. This is baby physics. When they are in their first 2 years of life, it is as if they are asking the question, "What can I do with this?" when they encounter new objects. Infants and toddlers are learning what objects can do, how objects work, and what they can do to make objects do their thing.

When they build with blocks and make roads for their Matchbox cars, they learn things like eight little blocks are as long as one big block. This is mathematics! Professor Ranald Jarrell, an expert at the University of Arizona on the development of young children's mathematical thinking, tells us in no uncertain terms why play is important for understanding mathematical concepts.

_Play is vital to the development of children's mathematical thinking. Unlike some forms of knowledge, mathematical knowledge, which deals with relationships between and among things, cannot be learned by hearing adults talk about it. Experimental research on play shows a strong relationship between play, the growth of mathematical understanding, and improved mathematical performance. . . . Without play . . . children's powers of mathematical reasoning would be seriously underdeveloped._

Is this the kind of knowledge that can be obtained from flash cards, or even from computer games that ask children to do comparisons between sets and simple counting and addition? No. What is needed are the gritty, day-to-day experiences of exploring, manipulating, sorting, dividing, and recombining that children have as they play with objects. Even toward the end of the 1st year of life, babies show evidence of making inferences about new objects based on similar objects they have encountered in play. In one study conducted by Professors Dare Baldwin of the University of Oregon and Ellen Markman and Riikka Melartin of Stanford University, 9- to 16-month-old babies were given a horn to play with, the kind of horn that makes a noise when you squeeze the bulb. After the children played for a while, the first horn was taken away. They were then given other horns, which had different colors and sizes but the same shape. Would the babies act as if they thought these new horns should also make a noise? If they did, it would indicate that they made an "inductive inference," by assuming that things that looked alike should have similar functions.

The babies immediately squeezed the bulbs, showing that they had made an inference about the new objects based on the old one. And when some of the horns didn't produce the desired effect because they had been purposely broken, the babies worked all the harder to make them blow! These babies were making inferences about properties of objects that you cannot _see_—their ability to make a noise. Child's play? Yes. And it is crucial for learning about the world!

**Discovering Hidden Skills**

**Making Inferences about Objects**

_Ages: 6 months to 16 months_

First, find two inexpensive toys that have the same function but don't look identical. Making a noise is a good hidden function for your child to try to find. Give the baby one of the toys and watch her play with it. See if she discovers the novel function on her own. Time how long she plays with it before she figures out its function. This is important because you will be comparing her behavior with toy 1 with that of toy 2. If she doesn't figure out how to make the hidden function occur after some time, show her how to make it happen. Let her play a bit more—hopefully she can reproduce the interesting function on her own—and then trade toys with her, giving her the new one. What happens? How long does it take (compared with when she played with the first toy) for your baby to make the second toy do its thing? Does she explore the toy for the same length of time that she explored the first one? Or does she immediately try to produce its effect? If you see a difference between the way the baby interacts with the second toy and the way she interacted with the first, remember that you are seeing the effects of a _limited amount_ of play on your child's cognitive development. Imagine how much babies and young children can learn about the world if allowed lots of playtime.
Studies consistently find that the availability of play materials is important for intellectual development. And that doesn’t mean buying the newest so-called educational toys, either. In the first 2 years of life, children seem to love toys that require fitting things together, putting things into openings, pushing and pulling things, musical toys, and toys that require eye-hand coordination. Toddlers with a wide variety of playthings available do seem to have enhanced intellectual development later on, at ages 3 and 4. In a study of 130 children over time, Professor Robert Bradley of the University of Arkansas found that the availability of play materials was one of the most consistent predictors of intelligence even when the children entered school. And the effect of having playthings on cognitive development is independent of the quality of parent-infant interaction. That doesn’t mean that parents don’t matter; we will shortly show you how much they do matter. What it means is that there is a separate, measurable effect on intellectual development of having a range of toys.

For preschoolers, intellectual development is served so beautifully through object play that there are a million examples to draw from. Take blocks, for example. As we showed above, children who play with ordinary blocks are figuring out mathematical equivalences. They face problems they create for themselves (and that is key), like “How many blocks of this size will it take to make another tower just like the first?” Block play helps develop other concepts as well. When children spontaneously sort them into categories by size, shape, or color, they are working on mastering what Piaget called logical classification. Children need to understand that the red and green blocks together make up all of the blocks. While this seems incredibly obvious to us, it takes time for children to figure out the relationships between the parts and the whole of a set. Even putting the blocks back (as in cleanup—yes!) teaches children about the properties of the blocks and how they are the same or different.

Clay is another medium that preschoolers love to work in. Just watch Aaron.

Aaron is busily playing with a large lump of clay. He pounds it repeatedly against the table, then pulls off a large piece, breaks it into several smaller pieces, and rolls them into balls. He soon grows tired of rolling, and so he flattens the balls into pancakes, which he distributes to the three children sitting at his table. Later he collects the pancakes and stretches them into hot dogs. Then he rolls them into balls again. Next he takes some of the balls, breaks them in half, and makes smaller balls of the broken pieces.

And so on. We could have gone on longer because Aaron did. Why does this play sequence seem so boring and mundane to us and so captivating to Aaron? Aaron is working on fundamental understandings about quantity and matter. Through our own play as children, we had the opportunity to work out these same understandings, understandings that we now take for granted. We are very sophisticated about the world and what causes change in it. Our preschoolers are not.

And we haven’t even mentioned the way in which this sort of intellectual play enhances intellectual curiosity and mastery. Children are in charge; children are calling all the shots, setting up their own problems, controlling their own learning.

**The Types of Play:**

**Convergent versus Divergent**

Intellectual play comes in many forms. Some kinds of play may actually promote children’s ability to solve problems. Psychologists talk about “convergent” problems and “divergent” problems. Convergent problems are like the one we described at the beginning of the chapter—figuring out how to get a toy out of a box by putting sticks together. There is only one possible solution to a convergent problem. The ability to solve convergent problems has been linked to successful performance on standard classroom and intelligence tests where there is one right answer. Divergent problems have multiple solutions, as when you play with blocks: There are a variety of structures that can be built. Divergent problem solving seems to require a greater amount of creativity because there is no one right answer. Several studies have looked at how play materials influence preschoolers’ ability to solve divergent problems, problems that require thinking outside the box. Let’s watch Amala and Michael as they participate in one of these studies.

Amala is an adorable 3½-year-old who seems mature beyond her years, one of those children who are 3 going on 13. Michael is a muscular little boy with lots of enthusiasm for whatever he does. Amala, with a group of her friends, is given a bunch of convergent materials to play with—like
puzzles—toys that have a single right way to play with them. While her group is playing, Michael’s group is given divergent play materials—toys, like blocks, that don’t require a single outcome. Both children have fun in their respective groups playing with their peers and toys. The test comes when Amala’s and Michael’s groups are given some divergent problems to solve. For example, both groups are asked to build a village with 45 pieces of the play materials. The researchers watch each group closely to see what the children do, counting up the number of structures they build and the number of unique names they use to label these structures. Michael’s group, which had played with the divergent materials, came up with more structures and more unique names for them. They worked away at the task and didn’t give up when they reached an impasse. Michael’s group used trial and error a lot. Amala’s group acted very differently. Having played with convergent toys that had one right answer, they got stuck and did the same things over and over again when they couldn’t do a divergent problem. They also gave up more quickly than Michael’s group. It was as if they had learned that problems have a single answer, while Michael’s group had learned that there is “more than one way to skin a cat,” as the saying goes. Creativity seemed to flourish in Michael’s group.

And what are all those expensive educational toys like on the market today? Most are convergent in nature; they usually look for a single, correct answer to a problem because they are busy teaching skills. Yet the research we’ve just described suggests that Michael’s group was not only more creative in their problem solving but showed more perseverance and enthusiasm. These are the behaviors and attitudes toward problem solving we want to cultivate in our children, not a penchant for looking for the one right answer. They’ll get enough of that in school. We want our children to know how to find the right answer when there is one, but we also want them to be able to think outside the box. Where does creativity come from? From play—good old unmonitored, unstructured free and open play.

In fact, pundits have recently written about how it’s okay for children to be bored. All parents have heard the whiny child who says, “I’m bored. I have nothing to do.” Children who are used to having all their time structured for them lose the resources necessary to amuse themselves. Amusing oneself is healthy. Living in your head a little and figuring out things you can do without classes, playdates, or television is not a bad thing. Children need to develop the ability to stimulate themselves. This, too, is part of play, and some of our children seem to have forgotten how it’s done!

When you think of play and its effects, consider your new equation: PLAY = LEARNING. And up to this point, we’ve discussed only how object play enhances intellectual development. We haven’t even talked about the part of play that makes childhood magical: pretend play, and what it does for intellectual development. Yet that element of make-believe, that nonliteral component that involves suspending reality, also makes an enormous contribution to children’s intellectual growth. For example, research has shown that the more advanced children’s pretend play is, the better they do on divergent problem-solving tasks. Although we cannot say that pretend play causes children to think more creatively, this link has been found in other studies as well. Why should there be a link between playing pretend and thinking divergently? The science of pretend play helps us understand how making believe a rock is a cup might be a cognitive catalyst.

**Kings and Queens: Pretend Play and Language Development**

Researchers have been able to document a sequence of pretend play behaviors that all children seem to go through. Professor Lorraine McCune at Rutgers University has been studying pretend play for years because she believes, following Piaget, that the ability to use objects as symbols for other objects is an important achievement that is related to children’s language ability. This is not a crazy idea. If the word “shoe” is a symbol, and using a block to represent a shoe is a symbol, then there might well be a relationship between children’s ability to deal with symbols in both these realms. To study this fascinating question, Professor McCune observed 102 children between the ages of 8 months and 24 months to see how they played with objects and what was happening in their language at the same time. She did indeed find a relationship between how children treated objects and their level of language development. Let’s look at David as he traverses the five levels of representational play that Professor McCune observed.
Finally, David reaches the pinnacle of this type of solitary pretend play by getting even fancier and showing signs of planning and thinking ahead. Now, at Level 5 ("hierarchical pretend"), David outdoes himself. He sees the cup and says, "Gotta feed Elmo." He then searches for something to use as a high chair for Elmo and settles on propping Elmo up between two big blocks. Then he looks for something to serve as a bib for Elmo and finds a paper napkin that he tries to stick on Elmo's chest. Since it has no way to stick, it falls, and David tries this several times before giving up. Then he finds the cup again and tells Elmo, "Drink milk," while holding the cup to Elmo's mouth. This very complex sequence tells us that David has a plan and that he is taking steps in a logical order to execute it. David and other children who show this kind of play in which acts seem to be organized hierarchically (set up Elmo, then attach bib, then feed) also have more advanced language capabilities. They tend to use somewhat longer sentences, now 2 or 3 words in length, more often.

What is so interesting about this work is that all the children Professor McCune studied seemed to go through this sequence in their play, even if they didn't do it at exactly the same age. But children didn't seem to skip levels. Not all children she studied showed this lockstep progress between pretend play levels and language, but in general she did find these links. Why should there be a link between children's language and their level of pretend play? Perhaps the underlying skills are the same. As we mentioned earlier, the skill in question here is being able to deal with symbols. Pretend play allows children to practice symbol manipulation. While other mammals play, no one has found evidence of make-believe play in any babies other than human babies. Make-believe play involves separating oneself from the here and now. It involves acting as if. It is part of what makes us human and serves as a platform for other symbolic thinking, even beyond the domain of language—in math, physics, literature, economics, and art. When children enter the world of pretend play, they are like the kings and queens of a new world—a world that they can build and control. Instead of relying on actual objects as they are, they now have the power to transform them and to serve their own purposes. This is creative thinking at its best. And pretend play is just the kind of practice that children need for symbol manipulation.

Another way in which pretend play changes with development is in the child's selection of objects to serve as substitutes for other objects.
As David gets older, he gets better and better at selecting substitute objects that look less and less like the objects they stand for. For example, at first, when David is about 18 months, if he wants to find something in his pile of toys to stand for a telephone, he will select an object that has an ambiguous function, like a rectangular block. He will not pick something that has a clear function, such as a car. It takes more appreciation of how symbols work for David to be able to override the conflicting cues offered by an object that has a real function. Part of this is because, like most young children, David has trouble thinking of something in two ways at the same time. By the time David is almost 3 years old, he'll be able to use a baby bottle as a comb, a car as a telephone, or a doll as a book. David has become freed from the perceptual features of the objects he plays with. This is a giant advance. At the next level of play in preschool, children eventually won't even need the props in front of them to assert that this or that is true or happening. Now they are really launched!

Discovering Hidden Skills | Pretend Play and Language Development

Ages: 8 months to 2 years

At what level of pretend play is your child's play? Put out some objects that are miniatures of real objects and that are likely to get pretend play going. Professor McCune found that baby dolls and stuffed animals and doll-size objects like combs and baby bottles elicit pretend play, as did a dump truck, a sponge, and a toy telephone. This is fun because it is also something you can try every few months to chart your child's pretend play and language advancement. If you keep a baby book, you can record your baby's age, what she does with the objects that you give her, what level of pretend play she exhibits, and what level of language she has (single words, combinations, little sentences). Consider your child to be at the highest level of pretend play she shows. It will be fun to compare this with later episodes and see how your child has progressed. Note, too, what objects your child selects as substitutes for other objects. Do the substitutes resemble the original objects they stand for? Or do the substitutes not resemble the original objects much at all? If the latter, then your child is demonstrating a higher level of pretend play.

Pretend Play with Peers Gets Social

Play has numerous advantages for children, and only some of those feed their intellects. In play, we do learn about objects and their relations, but we also learn about people and relationships. Play is a safe haven in which our children can conquer their fears and work out emotional problems. In fact, the only kind of therapy that can really be done with children is called play therapy. Children can also learn how to be doctors, firefighters, and superheroes with no physical risks. Play is a carefree space in which they can learn about their world and their place within it. Play is a place that allows children to deal with their hectic daily lives. As Tufts University Professor David Elkind wrote, "Play is nature's way of dealing with stress for children as well as adults."

Three-year-old children who use puppets to become Goldilocks or one of the Three Little Pigs learn about taking a perspective different from their own (they get better at this by ages 5 and 6). Children create emotional comfort for themselves through play. They cling to a favorite blanket or teddy bear. Their stuffed animal may have to take medicine along with them, or may have been the one responsible for knocking over a glass of milk.

Children do not function in a vacuum devoid of social interaction. After about 2½, pretend play starts to take place with other children and, if the child is lucky, with parents and caregivers. At first, the pretend play children engage in with others is very driven by the materials that they have in front of them. If they see an apron and put it on, they become "mommy"—no other speech or scene setting is necessary. But by late age 3, and 4 and 5, children come up with elaborate pretend play scenarios that can go on for a very long time. Sometimes one child will announce the theme of the play scenario to another child and they are off and running, as in “Let's pretend to go on a vacation to a beautiful hotel!” And then there are the play scenarios that most of us (whose families couldn't afford fancy vacations at beautiful hotels!) played: cops and robbers, house, and school. Just as we knew to take on roles and create conflicts and look for resolutions, so do our children. But psychologists now appreciate that child's play serves a number of important functions.
More Benefits of Pretend Play

Other than Piaget, the theorist who has most influenced our view of play is the late, brilliant Russian psychologist Lev S. Vygotsky. Although he died tragically at the age of 38, Professor Vygotsky's legacy to us is a play theory that places play at the very heart of children's development. Professor Vygotsky argued that children are at the highest level of their development when they are at play. For example, 5-year-old Jessica cannot sit still for more than 3 minutes in the classroom, even with a very supportive teacher. Yet in pretend play, she can play at being a good student with her peers, sitting and concentrating for more than 10 minutes! Professor Vygotsky said, "In play, a child is above his average age, above his daily behavior: In play it is as though he were a head taller than himself."

Professor Vygotsky believed that play served three functions. First, it creates the child's "zone of proximal development." As we discussed in chapter 6, this is where the child, with the help of a peer or an adult, goes a little further than what she can accomplish alone. Another function of play is to help the child separate thought and action. This is what we've described in how children go beyond the properties of the objects before them in pretend play. Professor Vygotsky summed this up nicely when he said, "The child sees one thing, but acts differently in relation to what he sees. Thus a condition is reached in which the child begins to act independently of what he sees." Finally, Professor Vygotsky saw play as facilitating the development of self-regulation. In chapter 7, we talked about how fundamental self-regulation is, from being able to stop crying as a baby to not blurtting out negative remarks to others when you're feeling bad. It is an essential skill for success in life and for getting along with peers. A great example of how self-regulation gets practiced in play is that of 2½-year-old Louis, who, in playing house, takes on the role of the baby. Even at 2½, Louis knows that if he is going to pretend to cry, he must stop when the "father" comforts him. This make-believe crying takes deliberateness and thought because it is not real crying that is coming from hurt or discomfort. The fact that play requires this kind of control from little children is very important for their ability to regulate their own behavior.

Another way in which children self-regulate is that they talk to themselves. Have you ever noticed that you talk to yourself when you are trying to accomplish a hard task? Professor Vygotsky noticed, too, that children talk to themselves a good deal during pretend play—even when they are playing with others. He called this private speech and found that children were working out what they wanted to do, and how their fantasy should proceed. This is one of the reasons that children must be in environments where they can verbalize while they play.

Professor Vygotsky was among the first to realize that child's play was really culture's play. As we internalize "scripts" for how to act in our society, we are learning how our culture does things. Professor Vygotsky gave a lovely example of two sisters at play. Remarkably, in this example, the sisters are playing at being sisters and are trying to figure out just what this means. In play, they make explicit the rules that are implicit in their own behavior, saying things like "Sisters don't hit each other." Children are always making up rules in pretend play and insisting on their being followed!

These new forms of make-believe are intricate in design and show us how our children are internalizing the world they live in. Sometimes, children build forts and play out a scene in which they capture the bad guys to save the world. And sometimes they play as star fairies. Sometimes our children just mimic the everyday scenes that are so commonplace to us. In the Please Touch Museum of Philadelphia, children flood into the pretend supermarket, where they can take plastic cans and produce off the shelves, where they wheel their miniature carts, and where they "pay" as they leave the store with their goodies. By the time children are shopping, they are pretending to adhere to the rules of society.

Part of the fun comes from imposing your own rules on the game of play. You would be amazed at what your children know if you just listened as they play. They have developed some very interesting theories, available to you only through their play. Can girls play construction worker? Can someone be both a mommy and a lawyer? Believe it or not, children are not always sure about the various roles that people can play. Before age 4 or 5, they are certainly not convinced that people can have multiple roles. Professor Vygotsky told us that in pretend play, the imaginary situation is explicit and the rules of the game are often implicit. Even when we watch children emulating what we do in the broader culture, they have interpreted things in their own, unique ways.
Discovering Hidden Skills: The Play “Script”

Ages: 3 years to 5 years

Eavesdrop. We know that isn’t a nice thing to do, but if you’re going to appreciate the complexity of your child’s play, you need to be a little devious. As your child engages in fantasy play, just listen in, but don’t make it obvious you are doing so. Does your child talk aloud? What does she say? Does she plan ahead in her talk? Does she speak for her own benefit or that of her pretend play characters? Does she recite rules of social interaction? As they play going to McDonald’s, for example, listen to whether they have that script right. What happens when we go to McDonald’s? What is the “airport” script? The “riding on a bus” script? Watch for that frightening moment when your child imitates you perfectly as she interacts with her fantasy actors!

Building these event structures in pretend play requires memory and the ability to take multiple actions and to arrange them in a kind of cultural story line. This sequencing is, in and of itself, an important arena where social development intersects with intellectual growth.

Play Enhances Emotional and Social Development

Another major benefit of play is that it helps children work through difficult emotional events. Children are very serious about their pretend play and often shoo away adults who would interrupt them. Why is this so important to them? Sometimes the themes are ones that they seek to gain control over, as when they reenact a conflict that took place the day before with a friend at school. Professor Greta Fein, a world-renowned expert on children’s play, argued that social pretend play is motivated by children’s need to get a grip on emotional experiences they want to work through. The difference between pretend play and real life, though, is very significant: In pretend play, children can maneuver the flux and flow of events as they wish. In real life, things often happen to children. In pretend play, children can express the things they are not yet sophisticated enough to talk about with adults. Laurie, a newly divorced mother of a 4-year-old, described how she learned what her child’s fear was by watching him play. She thought he was doing okay with her divorce after her husband moved out, and even after she and her son had to move to new, smaller quarters. But in listening to his pretend play, she heard his concern: Using his stuffed animals and talking aloud, he developed a scenario about how his mommy was going to go away, too. She was grateful for the glimpse his pretend play gave her into what concerned her son. She was careful to reassure him of her constancy at every opportunity after that.

And finally, sociodramatic play feeds into literacy because it becomes practice for storytelling. The stories children like to hear and the stories they act out in pretend play with their peers have lots in common. This type of play also allows us to suspend reality and to recognize that what we see is not always what we get. Once we can think of places and stories generated from our minds rather than strictly from what we can hold or touch, we decouple thinking from perception. We begin to build inner worlds. This is exactly what we do when we read books. We open the pages to new worlds and adventures that go well beyond what we can experience ourselves. We leave ourselves open to learning through others. Thus, this ability to imagine and to create new environments within the security of our own bedrooms is preparation for language, reading, and problem solving.

The skills that allow young children to remember, to use symbols, to create rules, and to direct are the skills that they need for school readiness. These are the stuff from which richer language, story lines, memory, attention, and planning are born. In the nexus where the social meets the intellectual, happy kids become smart kids. Through play, children build the courage and confidence to tackle learning in creative ways.

What Kind of Social Play Can I Expect at Various Ages?

Just as children play with objects in different ways as they get older, so too does the way they play with one another change as they age. At the end of the 1st year, children seem to treat one another like objects. They poke one another and seem otherwise to just play alongside one another without much recognition that another person is in the room. This has been called parallel play. You might find these children playing side by side with the lint on the carpet and totally satisfied just to be exploring!
By 13 or 14 months, children begin to use cooperative play. They might seek out one another, or take toys from one another. Sharing is not one of their better qualities at this age. But they do notice that the other person is there. And they are much more sophisticated in their play with familiar children than with unfamiliar children who come over to play. In playgroups, we actually see a higher level of play than we do on playgrounds because the children are somewhat familiar with one another.

At around age 2, children take a significant leap in peer play. For the first time, they take on roles like the bus driver or the zookeeper. They might also involve their friends in their activities. In the 3rd and 4th years, they even establish routines. Julie and Marge might take plastic telephones and start to talk to each other. Or they might play “teatime” by dressing up and sitting together at a pretend table with plastic cups and saucers. These play episodes at age 2 last for only a few minutes before the children move on to the next activity. When these same children are 3 or 4, the play becomes much more elaborate and can last for hours. “I’ll play mommy and you play baby.” This is typically when we meet the new superheroes in our family who zoom through the living room, rescuing the dolls in distress.

As children are motivated to play more, they also need to develop the social skills that allow them to play successfully. What does this mean? Children need to be able to figure out how play works. Imagine a scene at a playground. Julie sees four of her friends playing house, and she desperately wants to join in the fun. But she came out a little late, and things are well under way when she arrives. So, she stands there on the periphery, looking and waiting for some invitation. Now, there are a couple of ways in which this scene can end. On the brighter side, some sophisticated 4-year-old might look over, see Julie, and say in a cheerful voice, “Wanna come play?” That might happen, but it is just as likely that no one will notice that Julie is even there. What can she do? Well—she has to learn. She could rudely butt in, but that is unlikely to work and the other kids could get mad. Julie could go to the teacher, who could decide to make this a teachable moment for the others about social awareness. Or, in the best scenario yet, Julie could wait for a break in the action and then subtly join in, knowing that she is unlikely to get the really good parts in the script.

As you can now see, these episodes of make-believe are ripe with opportunities for learning about the self and about others. What if Jimmy doesn’t want to be the baby? What if Sarah wants to play tea party and Jesse wants to play store? Learning how to negotiate, to compromise, and to be a director who meets all needs are tremendously important social skills. These moments also give us the chance—as teachers and parents—to help our children learn emotional regulation. If you don’t get what you want, do you have a temper tantrum? Pout and make others feel guilty? Or make a bargain so that “first we do what you want and then we play store”?

Play serves the role of teaching social skills and also has an emotional role for children. Play helps children cope in a complex world. This role of play has a long history within the field of psychology. And many of us have seen it firsthand. Let’s watch Mikey (Kathy’s son) to get a sense of how powerful play can be in building our sense of self and in soothing our fears.

Mikey was 2 years old when Simba arrived. Yes, Simba—Mike’s hero from the famous Disney movie The Lion King—was now sitting beside him on his bed. Beyond speech (he was so excited), he took Simba carefully out of the box and gave it a huge hug. He owned Simba, and to his knowledge, he owned the real Simba—not an impostor. Simba soon came to meet Blankie—the other well-worn and very loved object that Mike carried around the house. Within just 3 months, Simba joined us on family vacations, came into the car, and even was privileged to ride with Mike on the back of his mother’s bike. Mike trusted Simba. There were many days when just before bed, Mike could be found reading a book to Simba and discussing the day’s events. When Mike had a fight with his older brothers, Simba protected him. When Mike was scared, Simba was the front man. Mike’s parents knew that Simba was a force to be reckoned with. As Mike got older, it was Simba who misbehaved. Amazingly, it was Simba who had thrown those animals around the bedroom. And it was Simba who had thrown Mike’s unwanted pasta in the trash can—not Mike. He’d never do that!

In play, a child can make his world over to suit him—without asking permission from adults.

Play with Friends—But Imaginary Friends?
One of the ways in which children learn to cope through play is through the friends they create that are totally in the mind of the beholder. As we
see from the comic strip Calvin and Hobbes, Hobbes is truly a good friend for Calvin—and Calvin is a rather normal little boy, and a very creative one to boot. Imaginary friends are usually the province of quite normal 3- to 5-year-old children who are blessed with wonderful imaginations. In her recent book, *Imaginary Companions and the Children Who Create Them*, Professor Marjorie Taylor tells us that children with imaginary companions tend to be more intelligent and more creative than children who don’t have such friends. Now, this does not mean that we should somehow implant an imaginary friend in the minds of our children. There are other ways to help our children be smarter and more creative through play. But it does mean that we need not worry if our children walk around talking to the air sometimes. As Calvin’s mom once noted, it’s better to join them than to question them. (In one comic strip, she actually called for Hobbes one day—her husband thought she had lost her mind, of course.)

In the preschool years, children are just learning about the world of possibilities, and there can be a fuzzy line between fantasy and reality. One of us remembers being terrified by the MGM lion when taken to movies. When it came on the giant screen, she would repeat over and over again the mantra her parents gave her, “It’s not real. It’s not real. It’s not real,” taking comfort from their amused expressions and their own calm demeanors. Many children fret about the monster in the closet, even when repeatedly reassured that only clothes “live” there. Here, too, play can help. When 2½-year-old Benj expressed real fear about the monster, we became the monster-bashing equivalents of the ghostbusters. We had a meeting, chased the monster at a particular time on a particular day, and flushed the monster down the toilet. Happily, he never returned.

The benefits of social play are many. Yet perhaps the biggest one of all cuts across the others. Children who play more are happier. When children are happier, they tend to relate better to their peers and they tend to be more popular. Social play not only makes you happy and intelligent, but it builds your social skills for the future. Those who played as children are also better at reducing their stress through play as adults.

Do Parents Affect Their Children’s Play? You Bet!

While children can do just fine playing by themselves or with friends, parents are actually very important playmates as well. There are “teachable moments” in play where parents can challenge their children to go just a little bit beyond what the children could do alone. Many researchers suggest that guided play is the royal road to learning. How do we find these teachable moments and build on play? If we tell stories to our children and then assign them to roles in the stories so that they can act them out, our children are more engaged, are better able to follow a story line, and are developing preliteracy skills. Professor Ageliki Nicolopoulou of Lehigh University warns, however, that we must not be too controlling in the stories that we create. As with language, we need to be partners with children, and we need to fit their themes into the story so that they have ownership of it.

### Teachable Moments

**Playacting**

To help your child develop preliteracy skills, first “borrow” a child if you don’t have an extra! Take turns having each child tell you a story about an event that happened at a place you visited together. The event can be as simple as that time a shopping cart hit mommy’s car while you were at the grocery store, or as exciting as a recounting of the camping trip you took to the Grand Canyon. As the child tells the story, write down what he says, prompting him when necessary to provide extra details or to fill in missing steps in the sequence of events. Then encourage him and the other children to playact the story that was just told.

### WHEN CAN CHILDREN FOLLOW THE RULES OF THE GAME?

As Piaget suggests, the great finale in play is when our children not only create the rules, but can also follow them. In pretend play, children make and negotiate the rules with their friends. They learn to play together in this way. But board games and sports do not afford children the opportunity to create rules at will. Anyone who has tried to play a card game with a 3-year-old knows this! They seem to make up the rules and just expect you to follow their fancy. Thus, the child—using a brilliant strategy of game control—always emerges as the winner.

Real-world games, however, are much more complex, and each rule is part of a larger system of fixed rules. In fact, after years of watching our
children play in the soccer league, some of us are still trying to figure out the intricacies of the corner kick! When are children developmentally ready to cope with the idea of teams and rules? In these complex games, the key is understanding not only what you are supposed to do, but also what the person next to you is doing and might do next. You must be able to anticipate what the person on the other team might do next. So, as a child, you might learn that you should kick the ball forward, but if that is all you do, you are not really playing the game of soccer. In fact, anyone who watches 4- or 5-year-olds on the soccer field will attest to the fact that when the ball moves into the field, you find a clump of children from both teams all trying to kick it at once. What’s most fun is when young children kick the ball into their own goal—so much for rules! It is not until age 7 or 8 that our children can truly understand the rules and play with strategy and planning. The same is true for board games. The simple games they start with, like Candy Land, demand only that you move forward and backward with the role of the dice. Our children can figure this one out, so they love to play, play again, and then when we are bored to tears—play just "one more time."

**Physical Play: The Benefits of Running Around**

What’s the first thing that comes to mind when we think about play? Being outside, in the sun, maybe in a playground, and running around. This is what lots of us did as children growing up—before safety concerns (not to mention lawsuits) removed monkey bars and seesaws from public parks. Many of us had the freedom—even if we grew up in cities—to walk places with friends and play hopscotch and various ball games. And did you ever wonder as a child how children everywhere seemed to know the same games? We did. Why was it that even if you went to visit your grandparents, the children there knew the hand clap games you played at home? Children play many of the same games and at the same ages because play is a mirror of children’s thinking and motor abilities. Play changes over time, gaining in complexity in a predictable way as children’s physical and mental capabilities change. Just as a 3-year-old doesn’t yet have the capability to hop on one foot and play hopscotch, the 5-year-old doesn’t yet have the mental wherewithal to repeat long strings of nonsense in hand clap games without lots of practice. Nor does the 3-year-old have the capability to play outdoor games with rules.

Of course, there are many varieties of play. Witness 4-year-old Jill, who is playing with the Brio train set—interlocking the various pieces to create an interesting track. She is practicing her fine motor skills (using her fingers). Then there is her sister, 2-year-old Samantha, who is climbing on the table in the background and who is testing out her gross motor skills (chest, legs, and arms). These physical play activities abound in our children’s world and are crucial to their development because they are taking pleasure in testing their budding abilities, learning how well they work, and practicing their various uses. “If I make my legs go real fast on the pedals, can I make a loud crash when I slam into the chair? Wow! That’s fun. I think I’ll do it again!” they might be saying to themselves. Activities like Gymboree, swimming, art classes, or local gym programs all build upon those physical play skills. But even without organized activities, physical play opportunities are found everywhere—in backyards, in baby walkers, and even in playpens; in scribbling with crayons, in shaping with Play-Doh, in fitting puzzle pieces together, children are practicing their budding motor abilities.

If we provide them with the opportunities to play in safe spaces, children can refine their skills and tone the muscles that they will need later for sports and for writing. But they will do this “work” at the appropriate level of challenge. Children have their own paces for developing these capacities. Most pediatricians now recommend against structured exercise classes for babies, for instance, because the doctors are seeing more bone fractures and muscle strains that result from pushing the babies beyond their natural limits.

In fairness, some of the reduction in outside free play, as well as the structuring of play by parents, is a result of parents’ fears about their children’s safety. One parent who lived next door to a park told us, “When I was 5, I played in the park near where I lived and no one minded. Now I’m afraid to let Erin go to the park with a friend—even though it’s right next door!—what with all that’s happening today.” This is not a concern that our parents had nearly as much. There is, though, a serious question about whether the risks to children have in fact increased or whether we are just more attuned to risk factors because of extensive media coverage of the things that do happen, albeit rarely. The important outcome, how-
ever, is a reduction in activities that children can do independently, removing some of the joy and spontaneity of childhood. Playing alone outside—even with friends—is getting rarer and rarer. What is replacing free play outside are organized sports activities that we sign our children up for, even as young as age 4. In fact, one study showed that between the ages of 6 and 8, organized sports take up approximately 20 percent of a child’s playtime. Yet organized sports aren’t the only option for safe outdoor play. If safety is a concern for you, perhaps you could arrange a rotating schedule with the parents of your child’s friends so that one adult always accompanies the children as they play outdoors. Another option might be to hire a trusted high school student to supervise your child’s time outdoors when you can’t be there.

Bringing the Lessons Home

Play is a central component in children’s mental growth. Play helps children make meaning in their world, it helps them learn about themselves, and equally crucially, it helps them to learn how to get along with others. Yet it can be difficult to resist the trends of our achievement-oriented society when we’re faced with the choice of allowing our children—more downtime or signing them up for the latest class, sport, or activity. The following tips can help you make play a central part of your children’s—and your own—life.

Become an advocate for play. If we know play to be important, we need to let our actions speak loud. Let us transform preschool rooms back into indoor playgrounds that encourage and promote learning in a playful way. Let us open up our homes to play and let us schedule activities around play rather than squeeze play around our activities. Let us also acknowledge that children need us to help them get going in their play, by providing stimulating environments and by entering in and injecting important knowledge from the wider world. By doing so, we will be sending the message that play is the answer to how we build happy, healthy, and intelligent children. Einstein knew that, and—with your help—so will the parents in your neighborhood.

Provide the resources for stimulating play. Simply having objects to play with appears to be an important component of later intellectual development. Why? Toys and play materials provide the stimulus for children’s exploration. When these things are interesting to children, children learn more from them. Toys and play materials are also centerpieces for interaction. When toys are interesting to them, you are more likely to see children coming together and united in a common activity. What do we all do when we are playing together, rather than alone? We talk more, create more, and engage more. These are the foundations for learning.

But there are several caveats. The first is that almost anything can be a toy. You don’t have to purchase a fancy toy to reap the benefits for learning and social interaction. Consider some of the low-cost alternatives for a change: Use blankets and chairs to make forts and tents. Our children loved this kind of play, perhaps because it made them feel safe and gave them a private space that they were in charge of (for a change!). Plastic forks make great items to use to build with, and ordinary, inexpensive white paper plates and a little string are great for making things like masks. How about using your plastic containers and different amounts of raw rice, beans, and split peas to make instruments? You can experiment with whether they sound different depending on what they’re filled with and how much they are filled.

The movie Toy Story was fascinating for children because it made their toys come alive. Stuffed animals can be characters in elaborate fantasy scenarios that you and your child concoct together. These can be at the playground, in school, in a car—all sorts of scripts can be played out. Seashells collected on trips make great toys, as do old tennis balls and old uniforms (try Goodwill stores), various inexpensive school supplies (those colored paper clips are great fun), used paper (ever make airplanes? or hats?), and, for the older set, coins. Sorting coins can be great fun. The trick is to look around your environment from your child’s perspective. Whatever it is that you are always warning your children away from is what fascinates them. Can you figure out a way to adapt it to make it safe so they can play with it, or can you find something like it?

Laura Berk, in her excellent book Awakening Children’s Minds, provides parents and caregivers with three useful questions to ask themselves before buying that next toy: “What activities will this toy inspire? What values will the activities teach? What social rules will my children learn to follow?”

Too often we buy what our children ask for and don’t stop to think
about whether it will be good for them to have that toy. Yet we are in control, just as we control whether the television is on or not. And we don’t have to shell out money for every educational toy that comes along or that toy the children see advertised on television. We’re not bad parents if our children are occasionally unhappy.

**Join in the fun.** Jane Brody, popular columnist for the *New York Times*, writes, “Toys are best seen as tools of play... Toys should be used as an adjunct to interactions between parent and caretaker, not as a substitute for an adult’s participation in the child’s play.”

Joining children in play is perhaps the hardest challenge we have to meet. We are up for a board game or two, but we are not as good at joining in their world. We get bored easily ourselves. If we don’t really believe that what they are doing is important, we have a tendency to either control the scene or to opt out of their play. Yet, whenever possible, join in rather than thinking, “Oh, good, she’s playing alone. I can now make that call I need to make.” Part of joining in requires that you give yourself permission to be a kid again and to see the world from that point of view. Do you remember when jumping in puddles was glorious and when you used to take apart Oreo cookies to lick the icing out of the middle? Do it again. You’ll find it rewarding.

**Let your child take the lead.** Child-directed games will pique interest and learning. When we make play into work by controlling or limiting it, our children lose interest, and we lose opportunities to bond and to imagine with them. We need to strive to find the delicate balance between providing props for play and directing play in our homes and in our classrooms. If we are going to present our children with an art project, we need to make it one where the children determine how the end product looks. We might find that they are capable—when they are the leaders—of going well beyond what we thought was possible. A good thing to remember is that it’s the process that counts, not the product.

Try to be a sensitive play partner—reading your children’s signals about how much involvement they want from you. Parents who are good at being play partners don’t tell children what to do or constantly ask questions or hint to children about the way to play the game.

**Encourage your child to use his imagination.** One way to get your child’s imagination flowing is to set up a pretend play sequence and then let him take it from there. For example, act out a visit to grandma’s house with your child, taking his lead. Perhaps you can get him started by using chairs to represent the seats in the car and encouraging him to drive you. You can pass all sorts of interesting things as you go and even worry about the weather because it’s snowing. And you can have the snowflakes look like little stars, cows, bowls—whatever you like. A trip to the swimming pool is another good one—best done in the dead of winter! Swimming on the carpet, you can spot all sorts of fish and plants and coins and other children and family members.

One game we always used to play in our (Kathy’s) house was “Imagination Is.” We would sit together on a bed, cover our eyes, and say, “Imagination is when you’re lying in bed, you close your eyes and open them. You’re somewhere else instead.” The children would take us to many fanciful places as we landed at the zoo, in a jungle, on the moon, or flying in the sky. Sometimes we were giants, and sometimes we were ants looking at the world as if we were in *Honey, I Shrink the Kids.* We would have an adventure at each stop and when we wanted to journey on, it was as easy as announcing, “Imagination is . . .” We would all cover our eyes and set out for new, child-directed sites. Pretend play is fun not only for the children, but also for the adults.

**Evaluate your child’s structured activities.** Obviously, there’s no need for you to abandon all of the structured activities your children participate in. But when you make choices for your children, select what looks like the most fun. Visit some of the classes or activities and see what the children are doing. Is the place one in which children can take a lead and show their creativity? Is it child-centered? Are they engaged in pretend and social play? Is there a happy feeling, and are children free to make a mess? Structure in activities is a good thing, but too much control is not. Also ask yourself what the purpose of the activity is. It should primarily be for fun and only secondarily for learning. The more we question our own motives and our own choices, the more we can close the gap between what we know is good for children and what we are actually doing with their time.