I’m sorting the bears,” says 4-year-old Mark to Julia. “I got red, blue, yellow, and green bears. You want to play with me?” “OK,” says Julia.

After playing for a while, they take out the balancing scale. Their teacher moves closer to observe. “The red bears are heavier than the blue bears,” Mark says to his teacher. “How do you know?” she asks. “They make the scale go down,” says Mark. “There are more red bears than blue bears.”

Young children are curious beings, discovering and investigating the world around them. They use their senses seeing, hearing, tasting, smelling, and touching to accomplish their tasks.

Play is the tool for this work—the tool young children use to explore the mysteries of the physical and social worlds. In play, children learn collaboration and conflict resolution with friends as they investigate the properties of equipment, materials, and routines. Through the phenomenon of play, children develop and learn as they participate in activities in every area of the classroom. Play affords children the ability to improve their language, social, physical, math, science, and thinking skills. The development and enhancement of these skills promotes their self-esteem.

Parten (1932) describes play in which children are observers, engage with materials independently (solitary play or parallel play), or interact or cooperate with others.

What is play?
According to Fox (2009), “… the following definitions from Webster’s are useful:
- light, brisk, or changing movement (e.g., to pretend you’re a butterfly),
- to act or imitate the part of a person or character (e.g., to play house),
- to employ a piece of equipment (e.g., to play with blocks),
- exercise or activity for amusement or recreation (e.g., to play tag) fun or jest, as opposed to seriousness (e.g., to play peek-a-boo or sing a silly song), and
- the action of a game (e.g., to play duck-duck-goose).”

Children get involved in many different kinds of play in preschool. As they move from one activity center to another, they adjust the level of interaction with others, assume roles, negotiate problems, and reflect preferences.

A growing body of research shows a connection between play—especially imaginative, pretend play—and the development of cognitive and social...
skills that are needed for learning more complex concepts. Play is linked to growth in memory, self-regulation, language, and symbol recognition.

“Play has also been linked to increased literacy skills and other areas of academic learning (a view held by Piagetian and Vygotskian theories of child development)” (Leong and Bodrova 2005). Just as a child’s daily use of the monkey bars builds strength and more fluid physical skills, opportunities for daily play build social, emotional, and cognitive strength.

Research on play
Children’s play has traditionally been a fertile ground for researchers who seek to understand how and when children learn about themselves, other people, and materials in their environments. The following is a snapshot of important research findings.

Bergen (2001) has studied the connection between children’s pretend play and their cognitive abilities. He observes: “Children begin to engage in pretend play, develop receptive and expressive language, and use mental representation at approximately the same time in their development.”

Role playing and imagination invite complex social interactions, including joint planning, negotiation, problem solving, and goal seeking. Children begin to think and use their own skills to plan interactions and temper behavior. Sometimes adults do have to step in to maintain safety or encourage harmony, but with adequate play experiences children become more likely to resolve their own conflicts: “Let’s both use it and play together.”

Welsch (2008) has investigated how children learn from literature—picture books, songs, and finger play. Her findings indicate that dramatizing stories from children’s literature is a potent form of play with cognitive, linguistic, and social benefits. Story-specific or symbolic props help children extend story lines and encourage role playing. Children can role play the characters of a story, and use story webs, KWL charts (what the child knows, wants to know, and has learned about a given topic), flannel board pieces, puppets, dolls, and other props. These tools

<table>
<thead>
<tr>
<th>Play</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unoccupied</td>
<td>Child is observing, not playing.</td>
<td>Juan stands near the sandbox, counting children and buckets.</td>
</tr>
<tr>
<td>Solitary</td>
<td>Children play alone.</td>
<td>Lori completes a puzzle, plays with a doll, or rides a bicycle.</td>
</tr>
<tr>
<td>Onlooker</td>
<td>Child watches, but does not engage in play.</td>
<td>Mari and Will watch two classmates negotiate the use of a balance scale.</td>
</tr>
<tr>
<td>Parallel</td>
<td>Children play independently, but side by side.</td>
<td>Jen and Carlos read books or build blocks next to each other with no interaction.</td>
</tr>
<tr>
<td>Associative</td>
<td>Children share materials, make their own projects, and tell stories about them.</td>
<td>Margo and Lynn share crayons at the art table and make their own pictures and talk about them, or pretend to run a restaurant in the dramatic play area.</td>
</tr>
<tr>
<td>Cooperative</td>
<td>Child is engaged in the activity and with other people involved.</td>
<td>Emily, Austin, and Ashlyn invite others to join a game of hide-and-seek after negotiating and sharing the game rules and goals.</td>
</tr>
</tbody>
</table>
help build their vocabularies, comprehension, imagination, and oral communication skills.

Thiel (2010) has done research in how children learn mathematical concepts through play. When playing on the playground, for example, children collect rocks, leaves, pine cones, and branches. They count, sort, and gather—precursors of counting and basic mathematical computation.

Emfinger (2009), also interested in the development of number skills, has examined how mathematics is used on a regular basis in play activities. In a study of children from preschool to fifth grade in a summer program, she found that their play “included the following arithmetic mathematical behaviors: one-to-one correspondence, counting, adding, subtracting, and representing number via written and spoken signs and symbols.”

She has described dramatic play, in which two or more children adapt roles and play out a script, as play that “involves representation, negotiation, perspective taking, and problem solving—the precursors to divergent thinking” (2009). As children become more engaged in pretend play, the play gets more complicated and different situations arise. The children start to solve their own problems with help as necessary from teachers. Emfinger identified “numerical conceptions” as children talked, used fingers and tally marks, and read numbers.

Vanfossen (2008) has investigated the social aspects of play in young children. He claims that young children do not have adequate opportunity to play games, interact in small groups, or explore artifacts that help them build background knowledge in social studies—history, geography, civics, the environment, and the economy.

But children do have opportunities to learn about themselves, others, and the environment in which they live through imaginary play (Benson 2004). Dramatic play allows children to act out stories, dress up, be creative, and socialize with friends. According to the Center for Best Practices in Early Childhood (2002), dramatic play “permits children to fit the reality of the world into their own interests and knowledge. In doing so, children are able to problem solve, work through conflicts, socialize, gain realistic experiences, and make sense of their environment.”

In addition, “Children experiment with different roles as they explore the familiar and the unknown through pretend play” (Townsend-Butterworth 2012). For many children, taking risks and trying out new activities—and trying on new behaviors—is often easier in dramatic play.
Assuming new roles helps children enhance peer relationships. “For example, young children use social skills to get a friend’s attention, offer or ask to share something, and say something to a friend,” (Ostrosky and Meadan 2010). Sharing, negotiating, and interacting with props often encourages a quiet observer to engage and respond with less hesitation and may allow a child to demonstrate a skill or knowledge that is unfamiliar to the group. Ostrosky and Meadan (2010) believe teachers can stimulate children’s play using prompting, modeling, and active role playing with peer groups.

Burton and Edwards (2009) have identified multi-fold rewards of play for English language learners: “Play is extremely beneficial in overcoming communication challenges between English speakers and speakers of other languages.” By sharing toys, role playing, and building together, children foster friendships in the classroom. Through pretend play, children build vocabulary that allows them to negotiate with one another. English language learners become more independent, use self-regulation, and develop self-esteem.

Weinberger and Stein (2008) have studied selected differences in boys’ and girls’ play in preschool: “Typically, girls arrange themselves in small groups of two or three with play that is relatively cooperative, whereas boys congregate in larger groups and are more likely than girls to be involved in direct competition with each other.” They found that in mixed-gender groups all children are competitive.

Strasser and Koppel (2010), who also studied gender differences, have reported: “When we encouraged children to take materials from one area to another, they moved naturally between centers as they extended their play scenarios.” Teachers also added books, photos, stuffed animals, and other props to allow more gender mixing in play areas. Some girls played in the block area, and boys went to the kitchen and dramatic area to investigate and explore.

Holmes and Procaccino (2009) have observed European-American children (3- and 4-year-olds) participating in outdoor play at nursery school. As a result of their study, they found that a child’s gender played an important role in the choice of outdoor play. Girls went to play in the sandbox, whereas boys gravitated to the swings and the jungle gym. Boys used the riding toys more than the girls.

“Once children engage in gender-specific play, they tend to play more with same-gender peers and play less with opposite-gender peers” (Frost, Wortham, and Reifel 2008). According to these authors, boys play more with blocks and toys, while girls use art materials and dolls.

“Children learn to communicate their feelings, thoughts, and needs through movement and play,” according to Stephens and Crowe (2008). Their small study of six 3-year-olds (three boys and three girls), which focused on gender differences in language and physical movement, found that girls conversed more than boys in their play. Boys were involved with discovery and adventure, while girls were engaged in dramatic play. Children who did physical movement activities stayed with same-sex peers. All children who were active in their play used more verbal language than children who played quietly.

Children with disabilities and developmental delays need repetition with visual and auditory cues, often more than their peers who are developing typically. Ganz and Flores (2007) did a small study of 4-year-olds: one group consisted of two children with typical development and one with autism, and the other group had the reverse. The researchers concentrated on visual strategies in the play groups, giving children many visual cues (pictures, class routines, and schedules, for example) to increase verbal communication and social skills. The children with autism also received speech and occupational therapy. The findings showed improved social, language, and communication skills in all the
children; the autistic children talked more than before but mostly to themselves.

What do we need to play?  
Age-appropriate materials

While specific recommendations for materials vary—wooden toys in preference to plastic, for example—researchers concur that age-appropriate toys and materials be accessible to children in all areas of the classroom and outdoors. Use the chart “Play materials in early care and education classrooms” to guide your toy, equipment, and material choices.

Summary and recommendations

Young children can sit for short periods of time in large groups, but they need to move about. Free-choice times allow children to play in many different centers of a classroom. The centers provide the small-group playing that is advantageous for developing communication and social skills.

One teacher, quoted by Stregelin (2009), has neatly summed up the compelling need for play in the early childhood classroom: “We use a play-based child-directed approach that focuses on developing autonomy and self-reliance.” With that in mind, we offer the following recommendations:

- Schedule time for children’s free play. Provide choices via learning centers in the classroom.
- Encourage the children, and act as facilitators to support the children in their many endeavors. If a child dresses up like a fire fighter, for example, ask, “What are you dressed as? What do you do?”
- Ensure a curriculum that allows preschool children many times of varied play throughout the day. According to Stregelin (2009), children participating in physical, cognitive, language, and social play will develop and succeed in school as they get older.
- Give children opportunities to engage in non-structured and structured play in the classroom. Reading aloud, engaging children in class discussions, re-enacting stories, and role playing improve verbal communication and literacy skills. Puzzles, counting and sorting toys, and cooking activities involve children in mathematics. Science is ongoing as children discover and use inquiry skills while they play with grass, twigs, bottle caps, and buttons in their classroom or outdoors. Children develop social and emotional skills in play by sharing, taking turns, resolving conflict, and learning self-regulation.
- Use movement activities during transitions. These could be games (freeze dance, musical chairs, red light-green light, duck-duck-goose), aerobic exercises, dancing with scarves, bean bag songs, scavenger hunts, marching with instruments, and playing with large balls, to name a few. Make use of both the playground and classroom to encourage children to develop gross-motor skills during free play.
- Encourage children to experiment with and refine verbal and socialization skills in play. Children will correct each other in word pronunciation: “It’s spaghetti, not psquetti.” They will remember other children about rules: “You have to put the checkers away to take out another game.” A child will tell another, “Don’t scream!” When manipulating play dough, children talk and laugh together. While on the playground, they make cakes and dig for dinosaurs. They pretend with dolls and puppets. They play follow-the-leader on tricycles and climbing structures.
- Work to facilitate children’s play. As children are engrossed in their play activities in the various centers, use open-ended questions to encourage interaction with teachers and peers. Provide props that help children pretend, imagine, create, explore, discover, and communicate as they play. Model interactions that promote children’s social skills, stimulate their sense of self-worth, and encourage collaboration.
- As teachers of young children, we need to facilitate the most natural and innate teaching tool at our disposal—play!

References


### Play materials in early care and education classrooms

<table>
<thead>
<tr>
<th>Skills developed through play</th>
<th>Toddlers and 2-year-olds</th>
<th>3- to 6-year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem solving</td>
<td>Puzzles (with 4-12 pieces); blocks that snap together; objects to sort (by size, shape, color, smell); materials with hooks, buttons, buckles, and snaps</td>
<td>Puzzles (with 12-20 pieces); blocks that snap together; collections of small objects to sort by length, width, height, shape, color, smell, quantity, and other features; collections of plastic bottle caps; plastic bowls and lids; keys; shells; counting bears; small colored blocks</td>
</tr>
<tr>
<td>Pretending and building</td>
<td>Blocks; transportation toys; construction sets, child-sized furniture (kitchen sets, chairs, play food); dress-up clothes; dolls with accessories; puppets; sand and water play toys</td>
<td>Many blocks for building complex structures; transportation toys; construction sets, child-sized furniture, play food and home-life tools; dress-up clothes; dolls with accessories; puppets and simple puppet theaters; sand and water play toys</td>
</tr>
<tr>
<td>Creativity</td>
<td>Large non-toxic, washable crayons and markers; large paintbrushes; finger paint; large paper for drawing and painting; colored construction paper; toddler-sized scissors with blunt tips; chalkboard and large chalk; rhythm instruments</td>
<td>Large and small crayons and markers; large and small paintbrushes; finger paint; large and small paper for drawing and painting; colored construction paper; preschooler-sized scissors, chalkboard and large and small chalk; modeling clay and play dough with shaping tools; paste, paper and cloth scraps for collage; musical instruments including rhythm instruments, keyboards, xylophones, maracas and tambourines</td>
</tr>
<tr>
<td>Listening and visual skills</td>
<td>Books and pictures with realistic images and clear, life-like detail</td>
<td>Books with more visual detail, more words, and new vocabulary; nonsense and realistic stories and songs; pictures that help draw associations between the known and the unknown</td>
</tr>
<tr>
<td>Listening Skills</td>
<td>Recorded and live sounds—both musical and environmental</td>
<td>Musical and environmental sound (recorded or real); stories with surprise endings, stories with predictable endings; rhymes; finger plays; puppets; opportunities to make up and repeat stories</td>
</tr>
<tr>
<td>Fine- and gross-motor</td>
<td>Large and small balls for kicking and throwing, ride-on toys; push and pull toys; tunnels, low climbers with soft material underneath; pounding and hammering toys</td>
<td>Large and small balls for kicking and throwing and catching; ride-on equipment including wagons, wheelbarrows, and tricycles; tunnels, taller climbers and wheelbarrows; plastic bats and balls; plastic bowling pins; targets and balls or beanbags; a workbench with vise, hammer, nails and saw</td>
</tr>
<tr>
<td>Technology</td>
<td>Not recommended</td>
<td>Programs that promote interaction (the child can do something), can be understood by children (the software uses graphics, spoken instruction, and print), allow children to control the software’s pace and paths, and provide opportunities to explore a variety of concepts on several levels</td>
</tr>
</tbody>
</table>


Welsch, Jodi G. 2008. Playing within and beyond the

About the author
Karen Sue Sussman teaches 3-year-olds at a nursery school in Bronx, N.Y. She received a bachelor’s degree in elementary education from Boston University School of Education and a master’s degree in early childhood education from Lehman College in New York. Her career includes 18 years of teaching 3- and 4-year-olds.