Infant play activities and games are essential tools for building cognitive skills. As babies grow and learn, mastering several developmental tasks or challenges reflects the enormous changes going on in their brains. Social interactions with attentive, responsive teachers and caregivers support these changes and spur development not only in brain function but also in social, emotional, and physical domains.

Most cognitive challenges for children from birth to age 2 fall into five broad categories:

- discovering information through sensory exploration—touching, smelling, hearing, seeing, and tasting;
- building and refining motor skills—balance, coordination, and stability;
- learning that objects have permanence—things exist even when we can’t see them;
- recognizing cause and effect—dropped objects fall to the floor; and
- observing that objects and people have shape and size.

You can support and encourage babies in these essential developmental tasks by engaging in play activities—including the tried-and-true nursery games that are so familiar to teachers and families. Remember, routine, consistency, and repetition are valuable supports for learning. Share the games you play with children with families and make sure all the teachers in the infant and toddler classrooms know the games, songs, and tunes.

**Sensory explorations**

“This Little Piggy” is a perfect example of interactive sensory play. It stimulates an infant’s sense of touch, sight, and sound while reinforcing adult-child bonds and trust. With this game, you help babies recognize that their bodies include a distant appendage—the toes. The stimulation that characterizes the game—massaging each toe individually and tickling up the leg to the baby’s tummy—reinforces neural pathways that are both physical and social.

Remember, babies use their
mouths for sensory exploration. Sometimes this means that what looks like aggression is actually curiosity. For example, 10-month-olds Jenny and Quinten are on the floor, and Jenny, who has mastered crawling, nears Quinten with her mouth open. It’s unlikely that her intention is to bite. Instead she’s likely to be eager to explore (with her mouth) Quinten’s brightly colored shirt sleeve. Rather than separate the children, interact with both. “Oh my, Jenny, you’ve spotted these bright colors on Quinten’s shirt.” Alert Quinten and then help Jenny use her fingers to touch the shirt, naming the colors for both babies. Never pass up an opportunity for authentic and informative conversation—even when the babies can’t talk back.

Make sure all classroom materials are safe for mouthing; they must be non-toxic and not pose a choking hazard. Clean and sanitize any material that’s been in one baby’s mouth before making it available for another’s play.

Broaden and expand sensory exploration with some of the following games, activities, and props.

**Texture quilt**

Use your own sewing skills or enlist a volunteer to make a texture quilt for the classroom. Sew together 10-inch squares of fabrics with unique and stimulating textures. Use smooth satin, bumpy corduroy, soft cotton flannel, prickly washable wool, and flannel-backed vinyl—all in bright, contrasting colors. Use the quilt for floor play, and encourage the babies to explore each texture. For example, “Juan, you’ve found the shiny red vinyl. Does it feel sticky on your hand? My fingers tell me it’s smooth, and my eyes tell me it’s red and shiny. Let’s find a soft square now.”

**What’s in the box?**

*Here’s what you need:*

- small box with lid
- small familiar objects that fit in the box

1. Place one item—a rattle, ball, cowbell, spoon, or dry washcloth, for example—into the box.
2. Invite one or several babies to join you on the floor.
3. Show the box and sing (make up a tune)

   There’s something in the box, in the box.
   What’s inside in the box, inside the box?
   When you lift up the lid, you’ll see a surprise.
   Can you see what’s inside, what’s inside?

4. Invite exploration. “What do you think is in this little box? Lift the lid, and we’ll see.” Continue the conversation, encouraging descriptions of size, shape, color, sound, or use.
5. Have the child replace the object and put the lid back on the box.
6. Repeat with different objects.

**Who’s this?**

*Here’s what you need:*

- close-up photo of each person in the group—including adults
- laminating machine or clear, adhesive-backed vinyl
- masking tape
1. Collect pictures of group members. If the class has a digital camera, take photos of everyone engaged in typical activities like eating, playing with toys, and napping.
2. Laminate the photos for durability.
3. Tape the photos around the room, giving children ample time to identify themselves and other members of the group.
4. Gather the photos, and with a small group, talk about each one. For example:

   Teacher: “Who’s this?”
   Child: “Alice.” (Child may simply point.)
   Teacher: “Yes, it’s Alice. What is Alice doing?”
   Child: “Eating applesauce.”
   Teacher: “Do you think Alice likes applesauce?”

   With non-verbal babies, create the conversation by yourself. For example, “I see a picture of Alice. I wonder what she’s doing. Oh, I see, she’s eating applesauce with a spoon. Alice’s smile tells me she likes the applesauce.”

   **Variation:** Use copies of the photos to make a class picture book. Buy small albums (sometimes on sale for as little as 50 cents) to stock the infant classroom library. You might dedicate an album to each baby or title albums according to activities like meal time, napping, or finger painting, for example.

   **Motor development**

   Motor skills that result from large and small muscle strength and coordination begin in newborns.

   **Texture box**

   Here’s what you need:
   - cardboard box, about 24 inches on each side
   - tape
   - 2 cinder blocks or other heavy weight
   - 8 brightly colored file folders
   - texture squares, photographs of children, or pictures of familiar objects

   Generations of families and teachers have recognized the learning opportunities offered by the simple nursery game “Pat-a Cake”: hand-eye coordination, muscle control, finger placement, rhyming words, body parts, and mimicry.

   Because large muscles tend to develop before fine motor skills emerge, give babies lots of opportunities to use their arms, legs, backs, and necks in play.

   **Mouth noises**

   Take every opportunity to initiate and encourage vocalizations. Mimic baby sounds during routine tasks like diapering and feeding. Make eye contact and sing simple (even made-up) songs and watch for babies to respond. Older infants will coo and make more deliberate sounds like *ma*, *ga*, and *ta*—essential precursors to meaningful language—if you encourage them. Through repetition, babies will learn to recognize words and song rhythms, and will soon vocalize along with you.

   Share variations of “Old MacDonald.” Substitute babies’ names for MacDonald’s and clothes items, friends’ names, or activities for the farm animals. For example, “Smiling Lizzy had a sweater, e-i-e-i-o.” Or sing “Old MacDonald had a …” and substitute grocery, school, zoo, or garden.
laminating machine or clear, adhesive-backed vinyl
scissors

1. Tape the bottom of the box closed.
2. Put the cinder blocks or other heavy object in the box to provide stability.
3. Close the box and tape securely.
4. Tape two file folders to each side of the box, one high and one low with the fold to the top.
5. Affix one texture square (foil, vinyl, burlap, sandpaper, mirrored tile, fake fur, for example) or a laminated picture to the inside of each folder.
6. Sit on the floor near the box and show the babies how to open and close the flaps. Talk with the babies about what they see and feel.
7. Encourage mobile babies to move toward the box and then sitting or standing to open the flaps.

Note: It’s essential to stabilize the box with weights to keep it from toppling over on wobbly babies who are learning to pull up to stand.

Shake bottles
Here’s what you need:
- clear plastic bottles with lids, empty and clean
- hot glue or super glue
- objects that fit inside the bottles and make noise or are visually stimulating like aquarium gravel, marbles, large confetti flakes, mini pom-poms, buttons, glitter, bells, and clothespins

1. Wash the bottles and remove any paper label or glue.
2. Put the chosen small objects into each bottle.
3. Put the lid in place and secure firmly with glue. Remember to check the seal often.
4. Introduce the shake bottles for visual, auditory, and motor skill development. Supervise infants carefully as immature muscle coordination sometimes results in bumps to the head and other body parts. Hold babies’ hands as they learn to shake the bottles, first with two hands and then with one.

Variation: Pour mineral oil—either clear or with an array of food coloring—into the bottles. The weight and viscosity of the oil will engage babies’ eyes and developing muscles. Alternatively, add beads, marbles, glitter, or short lengths of drinking straws, for example, and seal the lids with glue.

Tube runs
Here’s what you need:
- lengths of 3-inch PVC pipe (available at home supply stores) or cardboard tubing
- tennis balls
- drill and bits
- plastic cable ties
- tape
- basket

1. Tube runs are valuable learning toys for children of all ages. If you are building an activity for the indoor classroom, a simple length of cardboard tubing and tape is adequate. If, however, you’d like to build a more permanent, durable toy for outdoor use, plan to use PVC.
2. Most simply, tape the tubing on its side to a flat wall. Place the bottom of the tube about 12 inches from the floor and angle the top about 18 inches from the floor.
3. Place a basket on the floor under the bottom of the tube and invite babies to put a ball into the top of the tube and watch as it pops out at the bottom. This is an elementary lesson on the physics of friction and gravity.
4. If you choose the PVC installation, drill holes in the tube so that you can thread the cable tie through the hole and attach the tube to an outdoor fence. Place the top about 24 inches from the ground and the bottom about 18 inches from the ground. Place the basket on the ground under the bottom of the tube.

Variations: Vary the objects and encourage observations. For example, a large pom-pom will slide down the tube more slowly than a toy car.

Object permanence
Why do babies love to play peek-a-boo? Why do they develop separation anxiety? Why do older children play hide-and-seek and try to explain magic tricks? It’s all about healthy cognitive development.

Children learn through play that objects continue to exist even when they are out of sight. Help babies gain control of their environments by offering endless variations of peek-a-boo. Soon they will be in charge of making objects disappear and reappear.

Scarf play
Collect sheer scarves or cut 2 foot squares of soft tulle from a fabric store. Cover your own head with a scarf and ask, “Where is Ms. Mazie?” Help babies pull the scarf away saying, “Here I am!”

Ask babies if they would like their own heads covered and
drape the scarf lightly. Reframe the question, “Where is Margo?” and give the child time to pull the scarf away. The children will discover that they can see each other through the translucent fabric.

Cover—and let children rediscover—hidden objects like a shoe, a towel, or a stuffed animal. Extend the game with mobile babies by hiding so they can find you by following your voice or by encouraging them to look for and find a noisemaker.

Make scarves a permanent fixture in your classroom. Collect scarves in a variety of colors and sizes for motor play. Use scarves with music and show different ways to move a scarf—waving overhead or twirling in circles, for example.

Gather and dump
Help babies establish object permanence by allowing them to gather materials from around the classroom. Learning to put in (gather) and take out (dump) takes time and practice. You may need to demonstrate, but be sure to step away and allow children to figure out the process independently. As they build experience, you’ll notice the children sorting and classifying—important math skills—gathering blocks or stuffed animals but not both at the same time.

Provide various containers such as shoe boxes, baskets, plastic berry baskets, transparent plastic bottles, gallon milk jugs with a large opening cut in the side, and plastic bowls. Also provide various objects such as hair rollers, table blocks, clothespins, empty thread spools, extra-large wooden beads, large plastic lids, balls, plastic cookie cutters, and plastic animals. Be prepared for mobile babies to practice gathering—and dumping—any available object.

If the structure allows, tie a 5-gallon plastic bucket from the ceiling, just above toddler head height. Watch as children find that they can gather into an opaque container and stretch their bodies to tip the bucket and dump the contents.

Folder face
Here’s what you need:
- digital camera and printer or large facial photos cut from magazines
- file folders
- scissors
- craft knife
- glue
- laminating machine or clear, adhesive-backed vinyl

1. Using a digital camera, take full-face photos of children and print. Alternatively, scour magazines for full-faced photographs.
2. Trim the photos to fit on the back of a file folder, and glue in place.
3. Laminate the folder or cover in adhesive-backed vinyl.
4. With the craft knife, cut little doors in the folder cover positioned to reveal facial features—nose, eyes, chin, ears, and mouth.
5. Encourage discovery. Show how to open and close the doors to reveal features. Share vocabulary and challenge the baby to point to a real feature that matches the one pictured. Opening the door to reveal a nose, and say, “I see a nose. Where is your nose? Can you put your finger on my nose?”
Cause and effect
Babies prove they are adept scientists when they engage in activities that demonstrate cause and effect. They teach themselves that gravity always works when they endlessly play drop-the-spoon from the highchair. The spoon always lands on the floor, and never suspends in the air. “Jack and Jill” and “Humpty Dumpty” are traditional cause and effect nursery rhyme standards.

Roll the ball
Here’s what you need:
■ a medium-size, soft, air-filled rubber ball

1. Sit on the floor across from a baby who sits up alone. Show the ball.
2. Roll the ball across the floor, pushing with your hands and watch the response.
3. Encourage the child to roll the ball back to you, helping as needed. Note that the back-and-forth rolling becomes a kind of conversation with each of you taking turns.
4. Adding a song furthers the cognitive stimulation. For example, you can use the tune “Here We Go Round the Mulberry Bush” or make up one and sing:

This is the way we roll a ball, roll a ball, roll a ball.
This is the way we roll a ball across the floor this morning.

Water play
Here’s what you need:
■ large towels
■ plastic tubs
■ small, clean sponges
■ containers for pouring

1. Spread a towel on the floor and place a plastic tub on the towel. Pour about 1/2 inch of water into the tub.
2. Gather a few children at the tub for water play. If you choose to use more than one tub at a time, be sure there is adequate and vigilant supervision.
3. Introduce the sponges. Let the children touch the dry sponges and talk about the rough texture. Drop the sponges in the water and invite the children to pick them up—wet, cool, and dripping.
4. Invite the children to use their hand muscles to squeeze water out of the sponges and return the sponges to the tub to soak up more water.
5. Offer wide-mouth, shallow containers. Show and encourage children to soak the sponges with water in the tub and squeeze out the water into the small container. Watch as they repeat the fill and empty activity. Have a conversation using words like wet, dry, squeeze, drip, splash, and cool.

Shape and size in space
Babies everywhere are enchanted by stretching their arms wide and communicating, “So big” or “So much.” Investigating size and shape builds brain pathways that, when strengthened by appropriate activities and interaction, lead to math and spatial competence.

What fits?
Provide nesting materials like measuring cups or graduated plastic bowls. Invite children to investigate and discover that size
matters: Smaller things fit inside larger ones. Offer a collection of cardboard tubes or boxes and observe the play. Most babies will try to fit objects into the spaces and learn by trial and error what fits and what doesn’t.

Simple sorting
Invite children to sort familiar objects like toy cars and colored plastic clothespins. Put the objects on a tray in front of the child and watch, guide, and interact as the child separates the pins from the cars. In your conversation, talk about the differences in the objects. In this example you might describe colors, uses, and materials.

How big?
Here’s what you need:
- sheets of mural paper
- scissors
- markers
- tape

1. Cut lengths of mural paper, each about 3 feet long.
2. Invite willing babies to lie on the paper so you can trace around their bodies with the marker.
3. As the tracings are completed, label each with the child’s name and date. Tape to a wall.
4. Refer to the tracings often as you talk with children about size and how bodies grow.

Variation: If babies are unwilling to have their bodies traced, draw outlines of shoes, jackets, and hats. Talk with the children about the features and sizes of each, introducing new comparative vocabulary like smaller, bigger, larger, and rounder.

Never forget that a child’s success in the ability to think, reason, and solve problems depends on your responsive, attentive, and wise interactions. No activity works without you—and you, indeed, are more essential to learning than any particular activity or game. Build trust, invite babies to test new skills and ideas, and always reflect your respect and interest in their continued development.

Resources