

Learning to Move

Sandra Petersen and Emily J. Adams, with Linda Groves Gillespie

Reaching for a toy, 3-month-old Lucia surprises herself by rolling over. An hour later, she is still practicing.

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Sitting securely at 9 months, DeShawn is using both hands together to hold, bang, and toss small toys. He shifts his weight and maintains his balance as he reaches for the squeaky dog in front of him.

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Wyatt takes two steps, falls, gets up, takes two steps, falls, and gets up over and over, undaunted and determined to walk at 11 months.

Traditionally, we have thought of motor development as coming with maturation and that one skill leads naturally to the next as the child grows. But actually, motor development is a constant learning process and depends on a range of contextual factors (Atun-Einy, Oudgenoeg-Paz, & van Schaik 2016). A child's body is continuously growing and changing, and the environment offers different opportunities for movement. Each new movement involves the child making adjustments in balance and posture. Gibson (2000) describes the process of motor development as the child finding the best possible solutions to the problems and opportunities presented by their environment.

Think about the early skill of reaching. In the first months, a baby seems to move their arms randomly, without control or intention. Some people call this *body babbling*—the body is practicing for controlled movement the same way babbling speech is practice for later language. Over the first four months, an infant's reaching becomes more controlled and purposeful. For example, Sima's first swipe at a hanging toy misses by several inches, but her next swipe includes some corrections of angle, eye-hand coordination, and force of thrust. Before long, Sima masters hitting dangling bells. But has she mastered reaching? Perhaps for the moment. But within two

weeks, Sima has gained a pound and grown an inch. She is a little bigger and stronger, and she needs to readjust the force of her reach.

Later, at 7 months, she needs to reach from a sitting position—however, her reach makes her fall forward. She learns to shift her weight and her balance as she changes her position. And now she is crawling! How to reach for that giraffe when her hands and arms are busy holding her up? More learning. More shifting and balancing. And so on, with cruising, walking, stooping, and running. All of this learning and adjusting is complicated by Sima continuing to grow taller, heavier, and stronger. At the same time, her proportions are changing. Her newborn head was almost the same size as the rest of her body. Over the first two years, her body begins to grow and change. As a newborn, her arms were thin and short; now, her arms and legs grow longer and stronger. Her trunk changes from that adorable soft, rounded belly to the trim, strong body of a young toddler.

Infants' Learning About Movement

Learning about movement is discontinuous. This means that the skills learned from one ability—like crawling—are not the same skills that will help a baby learn to walk. In fact, crawling requires completely different skills than walking does. Toddlers give up a lot of speed, knowledge, and competence in order to walk. The payoff is the ability to do two things at once—move and carry things—and to see more from the relative increase in height (Adolph & Tamis-LaMonda 2014). In Karen Adolph's New York University Infant Action Lab, where researchers study how children adapt their movements to changes in the environment and/or in their bodies and skill levels, new crawlers move right onto a steep incline with no fear of falling—they don't recognize the risk. A few weeks later, as experienced crawlers, they back away from the edge. When they return as new walkers, they have forgotten all they knew about falling off edges and

are willing to step right onto the incline. They can't apply the knowledge of edges and inclines they gained as crawlers to the exact same experience while using their new skill of walking; they have to learn about safety and risks all over again.

Infants and toddlers enjoy movement for its own sake; they like to roll and crawl and cruise. They also move because they are interested in the people, nature, and materials around them. Think of how you've encouraged babies to crawl toward you by being on the floor, a few feet away, with your big smile and open arms. Have you noticed a toddler crouch down to watch an ant crawl across the sand? Or step and fall and step and fall to cross the room to the water table? These motivations—reaching you, getting closer to the ant, playing at the water table—all encourage movement. The greater number and variety of opportunities children have to move, reach, and handle objects, the more chances they have to grow, test, and refine motor skills.



Protecting times for active movement, sensory stimulation, fresh air, and outdoor play is vital for helping children develop large motor and fine motor coordination as they explore and make sense of their world.

Providing Affordances for Motor Learning

People who study motor learning describe how objects in the environment invite certain kinds of movement. Any object makes certain kinds of movement possible—the object *affords* certain actions. So, the opportunity the object offers is called an *affordance* (Adolph & Kretch 2015). For example, a small wooden firetruck affords a child the chance to hold it, run it along the floor while sitting or crawling, and use it to put out pretend fires in the block area. The child-sized firetruck in the play yard affords the child the opportunity to climb in, turn the wheel, and ring the bell. It is helpful to look around your play spaces once in a while and review whether you are offering a good variety of these invitations for movement.

When teachers understand that motor skills are the result of opportunities for learning, they can take a more active role. Here are some ideas:

- › Use a mirror for young infants to see themselves during tummy time. This will encourage them to lift their heads and strengthen their core.
- › Offer young infants toys that dangle overhead that they reach toward and bat into motion.
- › Set toys and materials on low tables, shelves, or the floor for older infants to discover as they crawl and walk.
- › Create an obstacle course for toddlers using firm pillows to climb over, chairs to move around, and other household objects to maneuver past.
- › Play follow the leader with infants and toddlers. Let them be the leaders while you imitate their movements as they use their bodies in new and different ways.
- › Have open spaces indoors for active play. Provide floor space for crawling, walking, and running. Offer surfaces at different levels. Design spaces that encourage children to climb and jump safely.

Providing Motor Challenges as Children's Abilities Grow

Keeping Up with Infants

Make sure that there is a lot of room for mobile infants to move in your classroom. Consider adding stairs, slides, large blocks, or an obstacle course to keep them busily moving and help them refine their balance. As infants' skills and interests grow, adapting this area every two weeks or so is helpful. Expect children of this age to be interested in throwing things, and offer acceptable choices like soft balls and large containers to aim them at.

Place low ramps for infants to crawl up and down and a central tunnel to crawl through—high enough to pull to stand on and exciting to use for games of peekaboo. Crawling infants will enjoy moving up and down the ramp on their bellies; when they are walking, they will enjoy the challenge of balancing up and down the ramps.

Adapting Fine Motor Experiences Throughout the Year as Toddlers Grow

Toddler room lead teacher Lourdes Schallock shares insights about adapting her classroom throughout the year to toddlers' changing interests and abilities in activities for fine motor skills:

At the beginning of the year, when the toddlers are young, I plan the curriculum with their beginning abilities in mind. Some of the children still mouth everything, others have very basic fine motor skills, and others are still engaging in solitary play but interested in parallel play. When I set out materials and present provocations, I take into account their range of abilities to make sure they all have opportunities to be successful, and at the same time to make sure that they are all being challenged by the tasks they choose.

As the year progresses, Lourdes change things to continue to challenge the children's growing abilities:

Beginning of the year/young toddlers:

- › Big knob puzzles
- › Finger crayons or block crayons
- › Basic three-hole shape sorter

As the year progresses:

- › Puzzles with smaller knobs that require pincer grasp
- › Soft blocks they can build with, knock down, and toss
- › Chunky crayons
- › Pip-Squeaks markers (short and chunky but cylindrical)
- › Solid big blocks to stack and see how high they can go

By the end of the year/older toddlers:

- › Longer markers
- › Thinner colored pencils
- › Multisided shape sorter

- › A variety of wooden blocks, including smaller unit blocks to build roads, towers, or a zoo

Adapted from J. Luckenbill, A. Subramaniam, & J. Thompson, *This Is Play: Environments and Interactions that Engage Infants and Toddlers* (Washington, DC: NAEYC, 2019), 66, 108–9.

Try It

As you try some new strategies, notice how the children respond so you can tweak your approach to better support where they are.

- › Appreciate the learning. Document and describe children's early attempts at new movements (body babbling). When you recognize the steps toward exciting milestones, look for ways you can help the learning happen.
- › Observe how a child's temperament influences motor exploration, and notice each child's individual approach to movement. Is the child cautious or completely unafraid? Offer activities that meet children where they are.
- › Observe yourself. Keep a list over the course of the day to see how often you provide opportunities for infants and toddlers to improve their motor skills. Ask yourself if you have enough different kinds of activities in the environment to support the wide range of motor development.

What we are learning from researchers about motor development is pretty amazing. We thought for a long time that one kind of motor skill led to another. Instead, it turns out that skills like crawling and walking are quite different from each other. Infants and toddlers keep doing the difficult work of learning these new skills because it's worth it. Crawling is a much better way to get around than rolling. Walking offers the chance for toddlers to see the world from a whole new vantage point—with the added bonus of being able to carry things in their hands. When you recognize young children's hard work at learning new motor skills, you'll be able to support all the steps along the way.

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