



Lullabies, Leaping, and Learning

Supporting thinking in infants and toddlers
through active music and play experiences

A five-month-old boy in a family child care home playfully flails his arms as he lies underneath a mobile. He accidentally bats a butterfly, making it swing. This causes much smiling and additional wiggling; once again, his hand sends the butterflies on the mobile flying. All this activity captures the attention of a 19-month-old girl, who stops playing and studies carefully this interesting activity. After a moment, she toddles over, draws back an arm, takes aim, and smacks the mobile, copying the baby. This sends it swinging violently, so much so that it comes loose and falls on the baby's head. "Uh-oh," she says, looking anxiously toward their caregiver. The five-month-old is smiling, however, and wiggling more actively than ever. He appears to believe that his wiggles and this interesting new result—the butterflies dangling from his head—are somehow related.

(Trawick-Smith, 2010, p.126)

The two young children in the story above are not only moving and playing; they are observing, experimenting, and puzzling over a new toy as they play. The five-month-old is engaged in a simple trial-and-error kind of thinking as he wiggles to keep the mobile swinging. He may not understand the precise connection between his movements and how the mobile swings, but he's figured out this much: if he keeps wiggling, interesting things will happen. The older girl is thinking in a more elaborate way about the mobile and how to make the butterflies move. She understands that batting the mobile causes them to fly about. She also quickly learns that hitting them too hard will make them collapse on the baby, and maybe even get her in trouble. The two children are thinking about their actions very differently, but both are definitely thinking.



Learning cause and effect through movement

One of the most important things that children learn in their first two years of life is that actions cause consequences. Almost all later learning requires this kind of causal thinking. As illustrated by the story above, children learn about cause and effect through physical play. As early as two months of age, infants learn that banging, squeezing, shaking, or mouthing an object can create an interesting effect. Once they discover this, they perform the action again and again. Active play with objects appears to be the most useful activity at this young age for learning about cause and effect. Even social interactions with parents, critical as they are for security and happiness, are not as effective in promoting causal thinking as shaking a toy that rattles or squeezing one that squeaks. One of the surest ways to set young children on a path toward early learning is to provide materials they can act upon to make things happen.



Ideas for the classroom

- Provide babies with rattles, stuffed animals, or socks that jingle or make other noises when shaken. Allow babies to discover and experiment with the new sounds these items make.
- Provide squeeze toys that cause varying sounds and visual reactions (e.g., a car that both honks and lights up).
- Offer toys that encourage children to anticipate an interesting effect, such as a wind up jack-in-the-box that requires repeated actions (and great suspense) before making a noise.
- Play causality games, such as “changing faces” (in which adults alter their facial expressions in exaggerated ways each time a baby touches their face).

Planning movement: The mind-body connection



Once infants acquire locomotor skills—crawling, walking, and running—they begin to think about how they must alter their movements in response to different kinds of play challenges. Crawling over a large, soft cushion, for example, requires different movements than crawling on a firm, carpeted floor. Babies need to adapt their movements accordingly.

One research study found that 16-month-olds modified their movements depending on the physical features of a bridge they were encouraged to walk over. When the bridge was narrow, they gripped onto handrails and shortened their steps. When it became very narrow, they would even sit down and scoot across or refuse

to go over at all. When confronted with a wider bridge, they would move across quickly and confidently with longer strides. Similar studies have found that children adjust their movements when walking up and down hills and playing on different kinds of surfaces.

In one fascinating study, 10-month-olds were found to modify their actions based on what they planned to do, before they had even done it! If they were planning to throw a ball, they would pick the ball up with one type of grip. If they were planning to drop the ball into a tube, they would pick it up using a different grip. All of these studies suggest that babies observe the demands of a particular play space or task, then alter their movements to meet these demands. In other words, they think about how they are moving.

Active music play: A strategy for supporting thinking and learning

Music is one activity where the mind-body connection is very strong, so it is a great way to promote both thinking and moving skills in young children. Research shows that very young babies adapt their movements based on what they hear. Babies will often show quick, rhythmic movements—bouncing or wiggling arms and legs—in response to lively songs. When hearing slower songs, they are more likely to vocalize and gesture. This suggests that infants can distinguish among different types of music and respond uniquely to each different type. They respond most actively and attentively to music that their mothers listened to when pregnant. They prefer songs that have the same musical properties as music that is common in their own culture. These studies suggest that there are intellectual components to infants' responses to music: processing, forming preferences, and reacting with their bodies.

Brain research confirms a music-brain connection. Musical experiences have been found to stimulate important parts of the brain, even in very young infants. It is not surprising, then, that musical abilities in the early years are related to later academic skills, such as reading.



You can encourage young children to listen and respond to music in ways that support both physical activity and thinking and learning:

- Play music that is meaningful to a child’s family and culture, even in the first months of life. Gradually vary musical experiences, so children can listen and respond to less familiar music.
- Play and sing a variety of types of music with varying rhythms and tempos, starting shortly after birth. Dance for babies, allowing them to watch as you dance in different ways to different types of music. Then dance with babies so they can feel differences in movement as you respond to different tempos and styles. By modeling different movement responses, you reinforce in infants the idea that their body can move in different ways in response to what is going on around them.
- Play background music in the home, classroom, and playground, and encourage spontaneous movement.
- Alter the type of music you play or sing within a single period of time—from fast tempo to slow, from flowing to more rhythmic—and demonstrate or encourage children to alter their movements to match this change. Ask toddlers questions such as, “How does this music make you want to move?”
- Ask toddlers to copy your movements during a dancing game, and change your movements throughout a song. Then ask the children to each take the lead and have everyone else copy their movements.
- Provide props for toddlers that encourage active movement to music: scarves, dress up clothes, and large mirrors for studying their own dancing.
- Use music to promote desired dispositions—to soothe, excite, engage, or puzzle infants and toddlers.

Additional Resources

For more information about supporting children’s physical play, including videos with ideas you can try in your own classroom, visit www.easternct.edu/cece.

For **references** for this tip sheet, visit: www.easternct.edu/center-for-early-childhood-education/about-us/publications.html

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