

SUPPORTING THE A IN STEAM WITH INFANTS AND TODDLERS

At first it may seem like the arts is out of place with science, engineering, technology, and math. But like S, T, E, and M, art is a way of thinking, creating, understanding, and communicating. Through early art experiences, infants and toddlers learn about their bodies and explore their world. As children scribble on a page or make up a dance, they solve problems and build creative skills. They learn to express their ideas and share their thoughts. From an early age, the arts help us communicate and connect.

THE TAKE HOME:

1. The arts support children's development across domains.
2. Art experiences help children build creative problem-solving skills.
3. Environments that support the arts are open-ended, accessible, and meaningful.



WHAT DOES RESEARCH SAY?

- Engaging with the arts builds skills across developmental domains. Music, for example, helps to build cognitive skills like understanding and using patterns. When infants listen and bounce along to music, they learn musical patterns. Research suggests that they also learn patterns that are important for language development¹. Music and songs are a fun way to learn language, particularly for children who are dual language learners.
- Creativity is an important skill that is strengthened through practice. **Young children are excellent creative problem solvers.** In certain contexts, children are better at creative, flexible thinking than adults². Providing open-ended arts activities helps young children build and maintain their creativity.
- **Children (and adults!) learn best in environments that are meaningful.** Art experiences can be particularly meaningful for children. As children explore and create, they make connections between their own thoughts and the world around them. They can also explore familiar and new cultures through music, dance, and visual art.



WHAT DOES IT LOOK LIKE?

- Art experiences are developmentally appropriate. It is unrealistic to expect that infants and toddlers are going to sit down and paint a picture. But young children can explore the arts and express themselves with support. Help parents think about what art experiences look like at a young age. For example, for infants, developmentally appropriate may mean chewing on a musical toy like a rattle. As they get older, they can explore other tools, like a drum or maraca, that they can use to make even more sounds and rhythms. With some guidance toddlers can play along and learn new musical beats and patterns.
- Creative tools are easy for children to access. These materials don't have to be fancy. It could be a scrap of fabric to use as a scarf. Or a paint brush with some water to use outside on a warm sunny day, or a paper towel tube to use as a trumpet. Help families find a place to store creative materials where children can easily find them. This way, children can use them whenever they want. For children with a disability or suspected delay, work with the family to find ways to adapt an activity so that the child can fully participate. For example, providing washable finger paints instead of markers or crayons that might be difficult for a child with limited motor skills to grab.

1 Zhao, T.C., & Kuhl, P.K. (2016). Musical intervention enhances infants' neural processing of temporal structure in music and speech. *Proceedings of the National Academy of Sciences*, 113, 5212–5217.

2 Gopnik, A., O'Grady, S., Lucas, C. G., Griffiths, T. L., Wente, A., Bridgers, S., ... Dahl, R. E. (2017). Changes in cognitive flexibility and hypothesis search across human life history from childhood to adolescence to adulthood. *Proceedings of the National Academy of Sciences of the United States of America*, 114(30), 7892–7899.

- Creative play is open-ended. To boost creative skills, children need opportunities to freely explore and create. What activities allow children to express their own unique thoughts and ideas? Help parents think about supporting open-ended play. Does the child have access to materials that are open ended, like blank paper and crayons, empty lightweight boxes, or other cardboard recyclables they can use to be creative?
- Art experiences are meaningful. The arts are a powerful way for children to connect with their culture and identity. Support families in adapting important cultural traditions for infants and toddlers. Are there songs, dances, or crafts to explore together? For example, if making beaded jewelry is important to the family, can you find large plastic or wooden beads that a toddler can start safely playing with? Or can you make your own beads out of cardboard, homemade clay, or aluminum foil?



TRY THIS!

- Bounce along to the beat. Listening and moving to music can help children learn about patterns and rhythm. There isn't one style of music that is 'best,' so encourage families to pick their favorite!
- Encourage children to talk about their art by asking open-ended questions. "Can you tell me about what you are working on?" Or "what is happening in this picture?" This helps children connect what they are creating to experiences in their life.
- The arts are more than just drawing and painting. Think about different types of art experiences, like building a sculpture, making a collage, or acting out a story.
- Use the whole body. Songs and dances that use many different parts of the body build muscle coordination. Head shoulders, knees, and toes is a good example. They also can help build executive function skills like working memory, and attention and focus. Almost any activity can be a song or dance. Help families think about what regular routines could be accompanied by a song or a dance. Bath time? Teeth brushing? Putting on shoes?
- Help families make the connection between the arts and developmental domains. It can be easy for parents to think that scribbling doesn't mean much. But scribbling is the first step in building the motor and cognitive skills required to read and write. Talk with parents about how early art experiences support development. Use the ELOF2GO mobile app for ideas!
- Explore emotions. Singing and dancing are both wonderful ways to explore how it feels to be mad or happy. Songs paired with dance movements can help children learn to express emotions. For example, how does my body look and feel when I'm sad, verses when I'm mad? Or how does this music make me feel – does it make me feel happy? Sad? Scared?
- Ask families about their experiences with the arts. Are there songs that they like or are meaningful to them? Do they make music, or other art now? Did they when they were growing up? Think together about how they could share those experiences with their children.

LEARN MORE

ART AND STORYBOOKS: IDEAS FROM STEAM

<https://eclkc.ohs.acf.hhs.gov/teaching-practices/teacher-time-series/art-storybooks-ideas-steam>

UNDERSTANDING STEAM AND HOW CHILDREN USE IT

<https://eclkc.ohs.acf.hhs.gov/publication/understanding-steam-how-children-use-it>

NEWS YOU CAN USE: MUSIC

- Part One: <https://eclkc.ohs.acf.hhs.gov/curriculum/article/news-you-can-use-music-part-1>
- Part Two: <https://eclkc.ohs.acf.hhs.gov/curriculum/article/news-you-can-use-music-part-2>

WHEN CHILDREN ASK "WHY?" STEAM SHARPENS THEIR INQUIRY SKILLS

<https://eclkc.ohs.acf.hhs.gov/teaching-practices/teacher-time-series/when-children-ask-why-steam-sharpens-their-inquiry-skills>



CONNECTING AT HOME

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Art is a way of thinking, creating, and communicating. As children explore arts activities, they learn about their bodies and their world. As they scribble on a page, or make up a dance, children learn to solve problems and build creative skills. From an early age, the arts help us to communicate and to connect.

SING A SONG

Try exploring emotions by singing about them. Songs paired with dance movements can help children learn to express emotions. For example, how does my body look and feel when I'm sad, verses when I'm mad? Or how does this music make me feel – does it make me feel happy? Sad? Scared?

MAKE SOMETHING TOGETHER

Try making a drawing, building a creation with the recycling, or making a dance together. Creating something helps children express themselves from an early age. Start a drawing and invite your child to add to it. Or make up a silly dance and see if your child will imitate you. Then take turns drawing or adding to the dance.

MOVE TO THE BEAT

Bounce along to the beat. Listening and moving to music can help children learn about patterns and rhythm. There isn't one style of music that is 'best,' so pick your favorite. What different beats can you explore together?

SHARE IDEAS

Children are creative and have many ideas about the world! When they are making something, ask them about it. Try not to guess what it is before they tell you. What might look like a tree to us, could be something completely different.

