



Information Brief:

The power of play in children's museums and elsewhere

Engage in joyful discovery through play!

While an exact definition of play is difficult to articulate, a report from the American Academy of Pediatrics describes it as activity that is, “intrinsically motivated, entails active engagement and results in joyful discovery.”ⁱ In more familiar terms, Fred Rogers shared, “Play is often talked about as if it were a relief from serious learning. But for children, play is serious learning. Play is really the work of childhood.” Play comes in many forms. It can be entirely freeform or structured, as in a game with set rules; it can be physically active or can focus on internal mental states, such as imaginative exploration; one can play solo or with others; it can take place indoors or outdoors, with or without technology or toys designed for play, with varying levels of supervision, in different places, for a short or a long duration of time.ⁱⁱ Cultural norms vary with regards to the ways different people are expected to play.ⁱⁱⁱ Yet, people of all ages can play, and play is a universal experience found in cultures all around the world.^{iv} As we embrace play throughout our work and lives, we can take Dr. Gholdy Muhammed's suggestion of “making joy a learning goal” that can cultivate our genius and nurture thriving communities.

Play is essential for healthy child development.

Infants start to play in their first months of life, interacting with caregivers through simple games of turn-taking, smiling, and mimicking sounds that support bonding and trust within the beginnings of nurturing, loving relationships.^v As we age, play teaches us how to manage our emotions, practice self-regulation, and interact productively with other people.^{vi} Play supports children's physical development and reduces stress.^{vii} Not only is play enjoyable and beneficial in childhood, but exposure to play in one's early years has long-term impacts on wellbeing and behavioral outcomes. For instance, people who play more in early childhood are less likely to engage in violent behavior as adults.^{viii} Child development experts agree that play is necessary for children's thriving. In 2018, the American Academy of Pediatrics called on pediatricians to begin writing “prescriptions for play” as part of children's regular well-visits.^{ix} The United Nations recognizes equitable access to play as a human right for all children.^x

Play is a safe way for children to assert their agency in the world.

Adults make many decisions that influence children's lives, including where they live, who they live with, what schools they go to, and what types of food, healthcare, recreation, and enrichment are available to them. As children age, it is essential that they develop skills to take increasing levels of agency over their lives; this helps children learn better and develop a stronger sense of self.^{xi} As Sevtap Gurdal and Emma Sorbring write, “Defining children as agentic is to grant them a mind of their own and their own will, and thereby acknowledge...children are active in creating meaning in life; they are not only recipients but creators.”^{xii} Play is one of the central ways children build skills to enact agency and understand how their choices influence other people. Free-play offers a wide range of choice whereas designed experiences can focus children's agency within a physical space, theme, or structure (e.g., a game with an articulated goal).^{xiii} In any context, co-learners and facilitators limit or enable the level of choice a child has over their engagement, exposing children to fluid social dynamics and power structures that affect agency.^{xiv} Adults and designed learning environments can intentionally create developmentally appropriate opportunities for children to become positive change agents in their families and communities.

Our society has a shortage of play.

Despite widespread acknowledgement of the importance of play, many people (of all ages!) are not getting enough of it. In recent decades, our society has emphasized the importance of early academic

learning, leading to increased structure in education and a marked decrease in the amount of time children spend playing.^{xv} Since 1980, the amount of time allocated to play has decreased by 25%, with school age children playing more than 12 hours less per week than they did several decades ago.^{xvi} This is concerning for the future of our children's development; when children are deprived of play, their brain development, problem-solving, and overall wellbeing suffer.^{xvii,xviii} Amongst both children and adults, play has the potential to reduce stress and improve mental health, a crucial need for our society.^{xix} While children are leading experts in play, it is also important for parents and adult caregivers to tap into their playful selves. Furthermore, access to play is distributed inequitably across our society. Children growing up in high-income areas typically have more access to parks and safe play spaces than their peers in low-income neighborhoods. Ongoing racial inequality means that today, most Black children grow up in neighborhoods that do not have walking paths, parks, or recreation centers.^{xx} Black children's play is further eroded by the tendency for adults to view Black children as less innocent and more like adults than white children, which leads to Black children often being discouraged from playing and receiving harsher punishment for youthful behavior.^{xxi,xxii}

Children's museums excel at cultivating play.

Although the benefits of play can occur in many different types of environments, children's museums offer particularly valuable contexts for play. This lies in museums' designed spaces that offer both the freedom of free-choice elements and intentional structure and scaffolding.^{xxiii} Research has repeatedly found that this type of "guided play" can lead to stronger learning and development outcomes than unstructured play and in many cases among early childhood learners, it can lead to even stronger academic gains than formal curriculum.^{xxiv,xxv,xxvi} The intergenerational learning that occurs in museums (where visitors often come in family or social groups) is distinct from teacher-student dynamics in most schools, offering unique opportunities for adults to guide children's learning. Additionally, museum staff and exhibits facilitate scaffolded experiences with intentional structure for playful experiences. This is particularly important in fostering museum-based play because research shows many adult visitors may undervalue the importance of play or choose not to actively scaffold play themselves.^{xxvii}

Children's museums promote physical development and healthy lifestyles through gross motor play.

Many children's museums encourage physically active play, whether that is through exhibits that invite crawling, climbing, sliding, and swinging; programming that engages visitors in dance, sports, or yoga; outdoor spaces for free play; or other means. There is substantial research showing that these types of gross motor play are crucial to children's physical development. For instance, gross motor play builds children's body awareness and strengthens motor skills.^{xxviii,xxix} Active play is a valuable way for children to engage in healthy risk-taking, which can support both physical and mental health and reduce self-destructive and harmful behaviors.^{xxx,xxxi} Physical play offers motivating ways to develop healthy lifestyles that can be linked to heart health, lower rates of obesity, and reduced stress.^{xxxii,xxxiii,xxxiv} Although many families are aware of guidance to keep active, families with young children tend to be more likely to engage in play-based activities than more structured opportunities such as sports or classes.^{xxxv}

Children's museums support academic skill development through play.

Different people learn different things in different ways.^{xxxvi} However, there is wide acceptance that play is an essential element of learning that supports the development of skills such as language, mathematics, and more.^{xxxvii} Play allows people to deepen their number sense; understanding of order, size, and shape; and concepts of addition and subtraction.^{xxxviii,xxxix} In language development, play helps children develop vocabulary, practice grammar, and enhance understanding of symbolic concepts such as letters.^{xl,xli} Whereas direct instruction is often most effective in leading to specific, content-related learning outcomes, play is vital in supporting the broader and deeper conceptual understandings and skills that underlie content learning.^{xlii} This is an excellent opportunity for children's museums to complement broader learning ecosystems: museums that invite children to playfully engage with concepts of numeracy, language, and other academic concepts prime young learners to better absorb formal learning in school. Furthermore, joy, a hallmark of many museum experiences, facilitates learning and intrinsic motivation to continue seeking additional learning.^{xliii,xliv}

Children’s museums use guided play to promote social-emotional learning for all ages.

Museums are designed to embrace social forms of playful learning, making them ideal places to foster social emotional learning. Through play, we learn to manage our emotions, self-regulate, and communicate with one another.^{xlv,xlvi,xlvii,xlviii,xlix} These benefits apply to adults as well as children; play can strengthen bonds between children and their caregivers and reduce parental stress.^{li} There are many offerings of formal curricula for social-emotional learning that produce positive outcomes, yet there is also evidence that play—particularly free-play and dramatic play—can be even more effective for boosting social-emotional learning than direct instruction.^{lii,liiii} Moreover, research shows that children’s museums’ semi-structured environments are more effective in engaging visitors in practicing social-emotional skills than free-play environments like playgrounds.^{liv,lv}

Children’s museums foster cross-cultural empathy and collaboration.

Museums welcome diverse groups of visitors from all over the world, offering a tremendous opportunity to support intercultural learning. When learners engage with people who have different cultural or conceptual understandings than they do, direct instruction can be ineffective, leading to increased polarization or a rejection of ideas. However, when the same people engage in inquiry-based, open-ended play and exploration, they experience deeper learning and demonstrate an enhanced capacity to collaborate.^{lvi,lvii} Beyond free play, museums’ designed environments and facilitation from museum staff can aid in scaffolding healthy cross-cultural interactions; even at a preschool age, social exclusion and bullying can easily arise during unstructured play.^{lviii,lix} Many children’s museums have also developed exhibits that engage children in learning about different cultures and considering perspectives other than their own. This type of engagement can build cultural empathy, reducing perceived barriers between people.^{lx}

Children’s museums nurture skills of innovation and creativity through play.

The systems of schooling in the United States were developed during a time when industrialization was prominent. In today’s economy when many rote jobs can be mechanized and companies often prize innovative and creative thinkers, play may be particularly valuable: play nurtures children’s autonomy and offers pathways for learning that are more akin to the demands of today’s world than traditional pedagogies that prioritize memorization and compliance.^{lxi} Children’s museums are already embracing this approach to learning, inviting young learners to make choices about their educational experiences and offering opportunities to create and innovate through art, making, tinkering, and more.^{lxii} Spaces like museums give children the opportunity to take creative risks and fail safely in a space where iteration and learning are valued more than objective standards of success.^{lxiii}

Play is a powerful experience that enriches people’s lives in museums, schools, homes, and beyond.

Play is vital for children, young people, and adults as well. Children’s museums have vast experience in creating playful learning experiences that are age-appropriate, hands on, interactive, and joyful. Even beyond their walls, museums form partnerships and build capacity to encourage more playful learning experiences in schools, homes, parks, hospitals, airports, malls, and beyond. Children’s museums provide examples of the many ways parents, caregivers, and educators can use play to facilitate wellbeing, healthy brain development, and to make learning more effective and joyful for everyone. As children’s museums, we believe in the power of play and we strive to nurture more play and playful learning everywhere we go.

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For more information, visit our website at www.childrensmuseums.org

ⁱ Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., & Golinkoff, R. M. (2018). The Power of Play: A Pediatric Role in Enhancing Development in Young Children. *Pediatrics*, 142(3).

ⁱⁱ Zosh, J. M., Hirsh-Pasek, K., Hopkins, E. J., Jensen, H., Liu, C., Neale, D., ... & Whitebread, D. (2018). Accessing the inaccessible: Redefining play as a spectrum. *Frontiers in psychology*, 9, 1124.

ⁱⁱⁱ Gaskins, S. (2013). Pretend play as culturally constructed activity. *The Oxford handbook of the development of imagination*, 224-247.

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- iv Hughes, F. P. (2021). *Children, play, and development*. SAGE publications.
- v Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., & Golinkoff, R. M. (2018). The Power of Play: A Pediatric Role in Enhancing Development in Young Children. *Pediatrics*, 142(3).
- vi Bodrova, E., Germeroth, C., & Leong, D. J. (2013). Play and self-regulation: lessons from Vygotsky. *American journal of play*, 6(1), 111-123.
- vii Bodrova, E., Germeroth, C., & Leong, D. J. (2013). Play and self-regulation: lessons from Vygotsky. *American journal of play*, 6(1), 111-123.
- viii Walker, S. P., Chang, S. M., Vera-Hernández, M., & Grantham-McGregor, S. (2011). Early childhood stimulation benefits adult competence and reduces violent behavior. *Pediatrics*, 127(5), 849-857.
- ix Wyckoff, A. S. (2018). Simple prescription: Pediatricians have role in promoting healthy development through play. American Academy of Pediatrics Clinical Report. Accessed from <https://publications.aap.org/aapnews/news/13532?autologincheck=redirected>
- x United Nations Human Rights Office of the Commissioner. Convention on the Rights of the Child. 1989. Available at: www.ohchr.org/EN/ProfessionalInterest/Pages/CRC.aspx.
- xi Hirsh-Pasek, K., Zosh, J. M., Golinkoff, R. M., Gray, J. H., Robb, M. B., & Kaufman, J. (2015). Putting education in “educational” apps: Lessons from the science of learning. *Psychological Science in the Public Interest*, 16(1), 3-34.
- xii Gurdal, S., & Sorbring, E. (2018). Children’s agency in parent–child, teacher–pupil and peer relationship contexts. *International Journal of Qualitative Studies on Health and Well-being*, 13(sup1), 1565239.
- xiii Hassinger-Das, B., Toub, T. S., Zosh, J. M., Michnick, J., Golinkoff, R., & Hirsh-Pasek, K. (2017). More than just fun: A place for games in playful learning/Más que diversión: El lugar de los juegos reglados en el aprendizaje lúdico. *Infancia y Aprendizaje*, 40(2), 191-218.
- xiv Wood, E. A. (2014). Free choice and free play in early childhood education: Troubling the discourse. *International Journal of Early Years Education*, 22(1), 4-18.
- xv Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., & Golinkoff, R. M. (2018). The Power of Play: A Pediatric Role in Enhancing Development in Young Children. *Pediatrics*, 142(3).
- xvi Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., Golinkoff, R. M., Baum, R., ... & Committee on the Psychosocial Aspects of Child and Family Health. (2018). The power of play: A pediatric role in enhancing development in young children. *Pediatrics*, 142(3).
- xvii Pellis, S. M., Pellis, V. C., and Himmler, B. T. (2014). How play makes for a more adaptable brain: a comparative and neural perspective. *Am. J. Play* 7:73.
- xviii Allee-Herndon, K. A., and Roberts, S. K. (2020). The Power of Purposeful Play in Primary Grades: adjusting Pedagogy for Children’s Needs and Academic Gains. *J. Educ.* 201, 54–63.
- xix Bodrova, E., Germeroth, C., & Leong, D. J. (2013). Play and self-regulation: lessons from Vygotsky. *American journal of play*, 6(1), 111-123.
- xx Sanders, M., Winston, J., & Rochester, S.E. (2023). Most Black children live in neighborhoods that lack amenities associated with child well-being. *Child Trends*. <https://www.childtrends.org/blog/most-black-children-live-in-neighborhoods-that-lack-amenities-associated-with-child-well-being>
- xxi Epstein, R., Blake, J., & González, T. (2017). Girlhood interrupted: the erasure of black girls’ childhood. Available at SSRN 3000695.
- xxii Gilmore, A. A., & Bettis, P. J. (2021). Antiracism and the adultification of Black children in a US prison nation. In *Oxford Research Encyclopedia of Education*.
- xxiii Andre, L., Durksen, T., & Volman, M. L. (2017). Museums as avenues of learning for children: A decade of research. *Learning Environments Research*, 20, 47-76.
- xxiv Weisberg, D. S., Hirsh-Pasek, K., Golinkoff, R. M., Kittredge, A. K., & Klahr, D. (2016). Guided play: Principles and practices. *Current directions in psychological science*, 25(3), 177-182.
- xxv Zelazo, P. D., Blair, C. B., & Willoughby, M. T. (2016). Executive Function: Implications for Education. NCER 2017-2000. *National Center for Education Research*.
- xxvi Tortella, P., Haga, M., Ingebrigtsen, J. E., Fumagalli, G. F., & Sigmundsson, H. (2019). Comparing free play and partly structured play in 4-5-years-old children in an outdoor playground. *Frontiers in public health*, 7, 197.
- xxvii Wolf, B., & Wood, E. (2012). Integrating scaffolding experiences for the youngest visitors in museums. *Journal of Museum Education*, 37(1), 29–38.
- xxviii Moghaddaszadeh, A., & Belcastro, A. N. (2021). Guided active play promotes physical activity and improves fundamental motor skills for school-aged children. *Journal of Sports Science & Medicine*, 20(1), 86.
- xxix Logan, S. W., Robinson, L. E., Wilson, A. E., & Lucas, W. A. (2012). Getting the fundamentals of movement: a meta-analysis of the effectiveness of motor skill interventions in children. *Child: care, health and development*, 38(3), 305-315.
- xxx Brussoni, M., Gibbons, R., Gray, C., Ishikawa, T., Sandseter, E. B. H., Bienenstock, A., ... & Tremblay, M. S. (2015). What is the relationship between risky outdoor play and health in children? A systematic review. *International journal of environmental research and public health*, 12(6), 6423-6454.
- xxxi Jerebine, A., Fitton-Davies, K., Lander, N., Eyre, E. L., Duncan, M. J., & Barnett, L. M. (2022). “All the fun stuff, the teachers say, ‘that’s dangerous!’” Hearing from children on safety and risk in active play in schools: a systematic review. *International journal of behavioral nutrition and physical activity*, 19(1), 72.
- xxxii Center on the Developing Child at Harvard University (2016). *From Best Practices to Breakthrough Impacts: A Science-Based Approach to Building a More Promising Future for Young Children and Families*.
- xxxiii Nelson, C. A. (2017). Hazards to early development: the biological embedding of early life adversity. *Neuron* 96, 262–266.
- xxxiv Ansari, A., Pettit, K., & Gershoff, E. (2015). Combating obesity in head start: outdoor play and change in children’s BMI. *Journal of developmental and behavioral pediatrics: JDBP*, 36(8), 605-612.

- xxxv Roach, L., & Keats, M. (2018). Skill-based and planned active play versus free-play effects on fundamental movement skills in preschoolers. *Perceptual and motor skills*, 125(4), 651-668.
- xxxvi Parker, R., Thomsen, B. S., & Berry, A. (2022). Learning through play at school—A framework for policy and practice. *Frontiers in Education*, 7, 751801.
- xxxvii Zosh, J. M., Hirsh-Pasek, K., Hopkins, E. J., Jensen, H., Liu, C., Neale, D., ... & Whitebread, D. (2018). Accessing the inaccessible: Redefining play as a spectrum. *Frontiers in psychology*, 9, 1-12.
- xxxviii Vogt, F., Hauser, B., Stebler, R., Rechsteiner, K., & Urech, C. (2020). Learning through play—pedagogy and learning outcomes in early childhood mathematics. In *Innovative Approaches in Early Childhood Mathematics* (pp. 127-141). Routledge.
- xxxix Fisher, K. R., Hirsh-Pasek, K., Newcombe, N., & Golinkoff, R. M. (2013). Taking shape: Supporting preschoolers' acquisition of geometric knowledge through guided play. *Child development*, 84(6), 1872-1878.
- xl Creaghe, N., Quinn, S., & Kidd, E. (2021). Symbolic play provides a fertile context for language development. *Infancy*, 26(6), 980-1010.
- xli Hà, T. A. (2022). Pretend play and early language development—Relationships and impacts: A comprehensive literature review. *Journal of Education*, 202(1), 122-130.
- xlii Zosh, J. M., Hirsh-Pasek, K., Hopkins, E. J., Jensen, H., Liu, C., Neale, D., ... & Whitebread, D. (2018). Accessing the inaccessible: Redefining play as a spectrum. *Frontiers in psychology*, 9, 1-12.
- xliiii Diamond, A. (2014). Want to optimize executive functions and academic outcomes? Simple, just nourish the human spirit. *Minn. Symp. Child Psychol.* 37, 205–232.
- xliv Betzel, R. F., Satterthwaite, T. D., Gold, J. I., and Bassett, D. S. (2017). Positive affect, surprise, and fatigue are correlates of network flexibility. *Sci. Rep.* 7, 1–10.
- xlv Tamis-LeMonda, C. S., Kuchirko, Y., & Song, L. (2014). Why is infant language learning facilitated by parental responsiveness?. *Current Directions in Psychological Science*, 23(2), 121-126.
- xlvi Reed, J., Hirsh-Pasek, K., and Golinkoff, R. M. (2016). "Meeting children where they are: Adaptive contingency builds early communication skills," in *Communication and Learning Handbooks of Communication Science*, Vol. 16, ed. P. Witt (Berlin: De Gruyter Mouton), 601–628.
- xlvii Leong, V., Byrne, E., Clackson, K., Georgieva, S., Lam, S., and Wass, S. (2017). Speaker gaze increases information coupling between infant and adult brains. *Proc. Natl. Acad. Sci. U.S.A.* 114, 13290–13295.
- xlviii Bodrova, E., Germeroth, C., & Leong, D. J. (2013). Play and self-regulation: lessons from Vygotsky. *American journal of play*, 6(1), 111-123.
- xlix Sidera, F., Lillard, A. S., Amadó, A., Caparrós, B., Rostan, C., & Serrat, E. (2021). Pretending emotions in the early years: The role of language and symbolic play. *Infancy*, 26(6), 920-931.
- l Berkule, S. B., Cates, C. B., Dreyer, B. P., Huberman, H. S., Arevalo, J., Burtchen, N., ... & Mendelsohn, A. L. (2014). Reducing maternal depressive symptoms through promotion of parenting in pediatric primary care. *Clinical pediatrics*, 53(5), 460-469.
- li Cates, C. B., Weisleder, A., Dreyer, B. P., Berkule Johnson, S., Vlahovicova, K., Ledesma, J., & Mendelsohn, A. L. (2016). Leveraging healthcare to promote responsive parenting: Impacts of the video interaction project on parenting stress. *Journal of Child and Family studies*, 25, 827-835.
- lii Goldstein, T. R., and Lerner, M. D. (2017). Dramatic pretend play games uniquely improve emotional control in young children. *Dev. Sci.* 21:e12603.
- liii Parker, R., and Thomsen, B. S. (2019). *Learning through play at school: A study of playful integrated pedagogies that foster children's holistic skills development in the primary school classroom*. Billund: LEGO Foundation.
- liiv Luke, J. J., Brenkert, S., & Rivera, N. (2022). Preschoolers' social emotional learning in children's museums and community playgrounds. *Journal of Early Childhood Research*, 20(2), 229-241.
- lv Andre L, Durksen T and Volman ML (2017) Museums as avenues of learning for children: A decade of research. *Learning Environments Research* 20: 47–76.
- lvi Yang, S. H. (2017, January). Teaching versus active learning: A computational analysis of conditions that affect learning. In *Proceedings of the Cognitive Science Society*.
- lvii van Schijndel, T. J. P., Visser, I., van Bers, B., and Raijmakers, M. E. J. (2015). Preschoolers perform more informative experiments after observing theory-violating evidence. *J. Exp. Child Psychol.* 131, 104–119.
- lviii Fanger, S. M., Frankel, L. A., and Hazen, N. (2012). Peer exclusion in preschool children's play: naturalistic observations in a playground setting. *Merrill Palmer Q.* 58, 224–254.
- lix Kirves, L., and Sajaniemi, N. (2012). Bullying in early educational settings. *Early Child Dev. Care* 182, 383–400.
- lx Du, J., & Cui, M. (2021). Intercultural Dialogues in Third Spaces: A Study of Learning Experiences of Museum Visitors. *Journal of Transcultural Communication*, 1(1), 79-101.
- lxi Golinkoff, R. M., & Hirsh-Pasek, K. (2016). *Becoming brilliant: What science tells us about raising successful children*. American Psychological Association.
- lxii Henderson, T. Z., & Atencio, D. J. (2007). Integration of play, learning, and experience: What museums afford young visitors. *Early Childhood Education Journal*, 35, 245-251.
- lxiii Geary, D. C., & Berch, D. B. (2016). *Evolutionary perspectives on education and child development*. Springer.