

California Preschool/
Transitional Kindergarten
**Learning
Foundations**

**Approaches
to Learning**



For Three-to-Five-and-a-Half-
Year-Old Children in Center-Based,
Home-Based, and TK Settings

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Introduction

The Preschool/TK Learning Foundations (PTKLF) in the domain of Approaches to Learning describe skills that help children engage in learning activities, problem-solving, and collaboration with peers and adults. The foundations in this domain describe children’s growing abilities to take initiative in learning, show persistence, regulate their behavior, focus their attention, adjust to changing demands in the environment, and collaborate with others during play and everyday activities. These skills are particularly important for **school readiness** and support children’s adjustment to formal schooling both socially and academically.¹

Early approaches to learning skills continue to develop as children transition to school. These skills are important throughout schooling and into adulthood.² For instance, studies show that children with higher levels of persistence, initiative, and engagement in kindergarten have higher levels of literacy and math achievement in first grade³ and up to fifth grade.⁴ Studies also find associations between approaches to learning skills in early childhood and outcomes in adulthood.⁵ Preschoolers with better **executive function** skills are more likely to pursue higher levels of education as adults.⁶ Early education programs, in partnership with families, play an important role in supporting children’s early development of approaches to learning skills.



The PTKLF provide guidance to all California early education programs, including transitional kindergarten (TK), federal and state preschool programs (for example, California State Preschool Program, Head Start), private preschool, and family child care homes, on the wide range of approaches to learning skills that children age three to five and a half typically attain when attending a high-quality early education program. Teachers can use the PTKLF to guide their observations, set learning goals for children, and plan for developmentally appropriate, equitable, inclusive practice, including designing learning environments and creating learning experiences that promote children’s learning and development in the Approaches to Learning domain.

Early education programs can use the PTKLF to select and implement curricula aligned with the PTKLF, guide the selection of assessments aligned with the PTKLF, design and offer professional development and coaching programs for educators to support understanding and effective use of the PTKLF, and enhance preschool to third grade (P–3) continuity across learning goals and practice in Approaches to Learning.

Organization of Approaches to Learning Domain

Strands and Sub-Strands

The PTKLF in the Approaches to Learning domain are organized into strands and sub-strands that address skills that are most effectively supported in high-quality, responsive early education programs.

- **Motivation to Learn:** This strand focuses on how children continue to develop their curiosity and interest, initiative, engagement, and perseverance.
- **Executive Functioning:** This strand addresses children’s development of **working memory**, **inhibitory control**, and **flexibility**. The term “executive functioning” refers to the ability to manage information, regulate attention, make decisions, and plan.⁷ Working memory is the ability of a child to keep information active in their mind for a brief time.⁸ Inhibitory control is the ability to manage impulses and reactions, as well as the ability to **delay gratification**. Inhibitory control allows children to adjust to **social conventions** or norms in their early education programs, even when these conventions or norms conflict with something they want to do (such as needing to take turns instead of shouting out) or something they are not used to doing (such as sitting in an assigned spot on the rug). Inhibitory control also includes children’s ability to manage their attention in the face of distractions or interruptions. Finally, flexibility is the ability to think and behave in new ways. Children demonstrate flexibility when they **adapt** their behavior based on changes in their environments, adjust a previous learning to a new situation,⁹ invent play scenarios based on their previous experiences, or use familiar objects in new ways.
- **Goal-Directed Learning:** This strand focuses on how children solve problems, including their abilities to carry plans and set goals, reflect, and collaborate with others in problem-solving.

Foundation Statements

Within each sub-strand in the Approaches to Learning domain are individual foundation statements that describe the competencies—and skills—that children can be expected to demonstrate in a high-quality early education program. Children develop these competencies at different times and in different ways within their home, school, and community contexts. The foundation statements are intended to help teachers identify learning opportunities they can support.

Age Levels

Age-based foundation statements describe what children may often know and be able to do as a result of their experiences and unique developmental journey in their Approaches to Learning skills. These statements are presented in two overlapping age ranges with full recognition that each child’s development progresses over the early years with growth spurts and periods of skill consolidation in different domains at different points in time:

- An “Early Foundation” addresses skills that children often demonstrate between three and four-and-a-half years of age.
- A “Later Foundation” addresses skills that children often demonstrate between four and five-and-a-half years of age.

Use of Examples

For each level of any given foundation, examples illustrate the diverse ways children may demonstrate their skills. Examples across the Early and Later foundation levels show development over time. The first one or two examples in each foundation are aligned across the Early and Later age levels. Examples show how children may demonstrate developing skills as part of their everyday routines, learning experiences, and interactions with adults and peers. Examples also provide different ways in which children may demonstrate their developing skills in different contexts, whether indoors or outdoors, and in a range of activities throughout the day.

Multilingual learners possess foundational language abilities developed in the context of their relationships in their homes and communities. The use of their home language in the early education program serves as a powerful tool, supporting children’s sense of belonging, bridging connections to their existing knowledge, and fostering deeper ties to their homes and communities. Examples in the home language of multilingual learners illustrate how multilingual children can further develop these foundational abilities by using their home language as part

of their learning and daily interactions with peers and adults in the early education program. In instances where a teacher may not be fluent in a child's home language, various strategies can encourage multilingual learners to use their home languages, allowing them to leverage all of their linguistic capacities. To facilitate communication and understanding, the teacher can partner with staff or family volunteers who speak the child's home language. The teacher can also use interpreters and translation technology tools to communicate with families and gain insights about what a child knows and is able to do. All teachers should communicate with families about the benefits of bilingualism and how the home language serves as a critical foundation for English language development. Teachers also should encourage families to promote their child's continued development of the home language as an asset for overall learning.

Some examples include how the teacher may support children as they progress to the next level of development in the skills of the foundation. Teachers may ask an open-ended question, scaffold learning by making a suggestion or giving a prompt, or comment on what a child is doing. The examples should help teachers gauge where a child's development is, consider how to support their development within their current skill level, and build toward the next skill level in that foundation. Furthermore, while the examples may provide teachers with valuable ideas for how to support children's learning and development as children build their skills in Approaches to Learning, the examples are a small subset of all the different strategies teachers may employ to support children's learning and development in this domain. At the end of this introduction, the section How Teachers Can Support Children's Approaches to Learning Skills offers ideas for ways to support children's learning and development in Approaches to Learning. Additionally, callout boxes with tips and strategies for teaching are embedded throughout the foundations to guide practice in the domain.

Diversity in Children's Approaches to Learning Skills

It is important to be aware of children's individual differences and experiences at home when considering their development of skills in approaches to learning. Children's living circumstances vary,¹⁰ as do their **temperaments**, personalities, and experiences with adversity, all of which can impact how easily they adapt to new classroom expectations. Factors such as sleep,¹¹ food insecurity,¹² or stress¹³ can affect how children approach learning. It is also important to be aware of the various ways children demonstrate their approaches to learning skills and abilities; for example, children with different temperaments or personalities may vary in the level of outward excitement they show when being introduced to new people or activities. Every child will have different ways of demonstrating abilities or expressing preferences.

Research suggests that a family’s cultural values and home practices can influence the development of their child’s approaches to learning skills.¹⁴ One visible difference in children’s approaches to learning is the way children from different cultural backgrounds show initiative. For instance, in Indigenous communities, children engage in household work and caring for siblings and Elders,¹⁵ which supports their collaborative initiative.¹⁶ They may be more likely to notice what they can do to help others and take the initiative to help the larger group. In addition, children from some cultural backgrounds may demonstrate initiative by observing others in an activity for a while before joining in, while children from other cultures may be encouraged to try something new on their own.¹⁷ Children also exhibit cultural differences in the ways they demonstrate excitement and attention in their learning; for example, some children may tend to demonstrate high energy and **verve** when they are excited and engaged in learning.¹⁸ Engaging in big body play (such as rolling, tumbling, and running around) can support children’s abilities to manage their attention and impulses.¹⁹



Children who are multilingual learners may demonstrate their approaches to learning skills in a variety of ways. For instance, multilingual learners may be more open to interacting with people from diverse racial, cultural, and language backgrounds,²⁰ which can be an asset when collaborating with peers in problem-solving during play and learning activities. Multilingual learners may use their home languages, English, or a combination of the languages they speak during daily interactions with peers and when expressing their interest and curiosity during activities. The examples in the Approaches to Learning domain illustrate different ways children from culturally and linguistically diverse backgrounds demonstrate growing skills in approaches to learning.

Children with disabilities may also show skills described in the Approaches to Learning foundations in a variety of ways and may require support tailored to their needs. For instance, children with **attention-deficit/hyperactivity disorder (ADHD)** may have difficulty managing their **impulsive behaviors** and attention in the face of distractions.²¹ They may benefit from extra time in classroom transitions and reminders. At the same time, they may show intense curiosity and initiative, as

children who are more impulsive may also have a strong drive to seek new information and explore the world around them.²² Children with **autism** may also have difficulty managing their impulsive behaviors and attention but may show high levels of curiosity and perseverance.²³ While supporting children in learning to manage their impulses, teachers can help children continue to build on their strengths.

Early education programs can partner with families and specialists to find the best ways to support children with disabilities by consulting a child’s Individualized Education Program (IEP). Ensuring that all children with disabilities have effective teaching and learning experiences requires families, teachers, and other specialists to work together to create and carry out an IEP that meets the child’s unique needs. Teachers can also provide additional support to children with disabilities; for example, they can encourage a child’s curiosity by prompting the child to explore new objects or environments using their senses, or they can model a behavior for the child and then describe what they observe as the child demonstrates the behavior for themselves.

How Teachers Can Support Children’s Approaches to Learning Skills

Environments that facilitate active, collaborative learning support children’s development of approaches to learning skills. Such environments include a wide range of opportunities for children to solve problems with others, be creative, explore using their senses, and engage with a variety of activities or materials alongside peers. Teachers can support diverse learners in developing their approaches to learning skills through the physical environment by creating spaces adapted to the various interests and needs of different children; for example, teachers may have a quiet area, provide various comfortable places to sit, and have a range of materials within children’s reach.

“Teacher” refers to an adult (for example, lead teacher, assistant teacher, child care provider) with responsibility for the education and care of children in an early education program, including a California State Preschool Program, a Transitional Kindergarten program, a Head Start program, other center-based programs, and family child care homes.

Creating Opportunities for Play

Play is one of the natural ways that children learn. Children build their curiosity, persistence, executive functions, problem-solving, and collaborative skills through play.²⁴ In particular, games

and play support the development of executive function skills. For instance, during imaginary play children use their flexibility to take on different roles and use familiar objects in new ways. Games are also a great way to help children exercise their executive functions. When children practice pausing before acting, such as in the games Simon Says and Red Light/Green Light, they are using their inhibitory control. By playing a variety of games with children and creating opportunities for children to engage in play, teachers can help children build their executive function skills.

Play can lead to deeper learning when play experiences are actively engaging, socially interactive, and meaningful; evoke joy; involve experimentation; and connect with children's prior knowledge.²⁵ It is important to support children's play-based learning by providing activities that allow for both free exploration children initiate and **guided play** opportunities facilitated by teachers, which are essential parts of an active and collaborative learning environment that fosters children's approaches to learning.²⁶

Set Up the Environment

Teachers can establish environments that promote children's approaches to learning skills. For instance, teachers can provide objects and materials that promote hands-on exploration. Teachers can also support children's curiosity, interest, and engagement by creating spaces for children to engage in specific activities (for example, sociodramatic play, artistic expressions, and scientific exploration). When children have varied materials and spaces for activities, they can make choices based on their interests and fully immerse themselves in learning. Another important aspect of the environment that can support engagement and help children with challenging behaviors is consistent, yet flexible, routines. Routines and schedules provide predictability and help children feel safe, learn self-management skills, and stay engaged in learning.

Making space and time for small-group activities can facilitate engagement and curiosity too. For instance, when children work together toward a clear goal, they can engage and persist for longer. It is important to consider the range of children's abilities when planning small-group activities so that each child can contribute.

Provide Support and Encouragement

Interactions between adults and children are an integral part of how children develop their approaches to learning skills. For instance, thoughtfully assisting children during challenging tasks by providing just enough help (not too much or too little) supports the development of children's initiative, persistence, engagement, and motivation. Observing children and waiting for them to ask

for help or noticing when they are starting to become frustrated can help teachers figure out when to intervene with help. Teachers can also model positive approaches to learning skills to influence those skills in children; for example, introducing a new activity with enthusiasm and wonder promotes excitement and curiosity in children.

Teachers can support children’s ability to positively approach tasks, solve problems, focus, and persist in difficult tasks by providing developmentally appropriate social–emotional and academic support while considering children’s interests and preferences during learning activities.²⁷ When children feel emotionally supported by the adults in their lives, they are more likely to show perseverance and collaborative efforts.²⁸ Refer to the Social and Emotional Development domain for more information about how teachers can positively engage with children in a manner that supports their learning experiences.

Collaborate with Families

Interactions and partnerships with families also play an important role in the development of children’s approaches to learning. Teachers can learn how children interact and behave at home in order to engage diverse learners in multiple ways. In addition, it is important to recognize that children may engage or behave differently at home than they do in an early education program. When teachers collaborate and communicate with families about the families’ values and home practices and make connections between the home and classroom experiences, children may be more motivated to learn and show persistence and engagement.²⁹ Teachers can consider inviting families to contribute to the classroom activities and environment in meaningful ways, such as by introducing some of the child’s favorite books, activities, or games from home. Sharing the program’s learning approaches and activities with families is another way to encourage family and teacher collaboration. Family routines and practices at home can also support children’s school readiness. For instance, playing games, creating art activities, or participating in literacy activities together can support children’s initiative, persistence, and attention management.³⁰ Building on the strengths of families, learning from them, and inviting them to be a part of children’s learning experiences is an important driver of children’s development of approaches to learning skills.³¹

Endnotes

- 1 A. S. Bustamante and A. H. Hindman, “Construyendo en la Fuerza: Approaches to Learning and School Readiness Gains in Latino Children Served by Head Start,” *Early Childhood Research Quarterly* 52 (June 2020): 124–137; P. A. McDermott, S. H. Rikoon, and J. W. Fantuzzo, “Tracing Children’s Approaches to Learning Through Head Start, Kindergarten, and First Grade: Different Pathways to Different Outcomes,” *Journal of Educational Psychology* 106, no. 1 (February 2014): 200–213; C. M. McWayne, J. W. Fantuzzo, and P. A. McDermott, “Preschool Competency in Context: An Investigation of the Unique Contribution of Child Competencies to Early Academic Success,” *Developmental Psychology* 40 (July 2004): 633–645.
- 2 F. Cunha et al., “Interpreting the Evidence on Life Cycle Skill Formation,” in *Handbook of the Economics of Education*, eds. E. A. Hanushek and F. Welch (Amsterdam, the Netherlands: North-Holland, 2006): 697–812; C. P. Li-Grining et al., “Children’s Early Approaches to Learning and Academic Trajectories Through Fifth Grade,” *Developmental Psychology* 46, no. 5 (September 2010): 1062–1077.
- 3 J. Sung and K. A. Wickrama, “Longitudinal Relationship Between Early Academic Achievement and Executive Function: Mediating Role of Approaches to Learning,” *Contemporary Educational Psychology* 54 (July 2018): 171–183.
- 4 Li-Grining et al., “Children’s Early Approaches to Learning,” 1062.
- 5 T. E. Moffitt et al., “A Gradient of Childhood Self-Control Predicts Health, Wealth, and Public Safety,” *Proceedings of the National Academy of Sciences* 108, no. 7 (February 2011): 2693–2698.
- 6 S. F. Ahmed et al., “Preschool Executive Function and Adult Outcomes: A Developmental Cascade Model,” *Developmental Psychology* 57, no. 12 (December 2021): 2234–2249.
- 7 C. Blair and C. C. Raver, “School Readiness and Self-Regulation: A Developmental Psychobiological Approach,” *Annual Review of Psychology* 66 (January 2015): 711–731; Harvard University Center on the Developing Child, *A Guide to Executive Function*, <https://developingchild.harvard.edu/guide/a-guide-to-executive-function>; P. D. Zelazo, “Executive Function and Psychopathology: A Neurodevelopmental Perspective,” *Annual Review of Clinical Psychology* 16 (February 2020): 431–454.
- 8 S. Gathercole and T. P. Alloway, *Working Memory and Learning: A Practical Guide for Teachers* (Thousand Oaks, CA: Sage, 2008).
- 9 A. Diamond, “Executive Functions,” *Annual Review of Psychology* 64 (February 2013): 135–168.

- 10 M. K. Georgieff, K. E. Brunette, and P. V. Tran, “Early Life Nutrition and Neural Plasticity,” *Development and Psychopathology* 27, no. 2 (May 2015): 411–423; E. L. Prado and K. G. Dewey, “Nutrition and Brain Development in Early Life,” *Nutrition Reviews* 72, no. 4 (April 2014): 267–284; M. Teicher et al., “The Effects of Childhood Maltreatment on Brain Structure, Function and Connectivity,” *Nature Reviews Neuroscience* 17 (October 2016): 652–666.
- 11 A. Bernier et al., “Sleep and Cognition in Preschool Years: Specific Links to Executive Functioning,” *Child Development* 84, no. 5 (February 2013): 1542–1553; G. Curcio, M. Ferrara, and L. De Gennaro, “Sleep Loss, Learning Capacity and Academic Performance,” *Sleep Medicine Reviews* 10, no. 5 (March 2006): 323–337; C. Hoyniak et al., “Sleep Across Early Childhood: Implications for Internalizing and Externalizing Problems, Socioemotional Skills, and Cognitive and Academic Abilities in Preschool,” *Journal of Child Psychology and Psychiatry* 61, no. 10 (October 2020): 1080–1091.
- 12 C. Blair, “Stress Relief Can Be the Key to Success in School,” *Scientific American Mind* 23, no. 4 (August 2012): 64–67; P. Shankar, R. Chung, and D. A. Frank, “Association of Food Insecurity with Children’s Behavioral, Emotional, and Academic Outcomes: A Systematic Review,” *Journal of Developmental & Behavioral Pediatrics* 38, no. 2 (March 2017): 135–150.
- 13 Blair, “Stress Relief Can Be the Key,” 64–67; J. E. Finch and J. Obradović, “Adversity and Stress: Implications for the Development of Executive Functions,” in *Executive Function: Development Across the Life Span* (New York, NY: Routledge, 2017), 147–159.
- 14 Bustamante and Hindman, “Construyendo en la Fuerza,” 124–137.
- 15 L. Alcalá et al., “Children’s Initiative in Contributions to Family Work in Indigenous-Heritage and Cosmopolitan Communities in Mexico,” *Human Development* 57, no. 2–3 (June 2014): 96–115; A. D. Coppens et al., “Two Cultural Paradigms of Children’s Contributions in Family Work,” in *Familial and Friendship Relations and Spatial Socialities: Vol. 5*, eds. S. Punch, R. M. Vanderbeck, and T. Skelton (Heidelberg: Springer, 2015): 187–213.
- 16 A. D. Coppens and L. Alcalá, “Supporting Children’s Initiative: Appreciating Family Contributions or Paying Children for Chores,” *Advances in Child Development and Behavior* 49 (November 2015): 91–112.
- 17 See, for example, R. Paradise and B. Rogoff, “Side by Side: Learning by Observing and Pitching In,” *Ethos* 37, no. 1 (March 2009): 102–138.
- 18 B. L. Wright and S. L. Counsell, *The Brilliance of Black Boys: Cultivating School Success in the Early Grades* (New York, NY: Teachers College Press, 2018).

- 19 California Department of Education, *Creating Equitable Early Learning Environments for Young Boys of Color: Disrupting Disproportionate Outcomes* (Sacramento, CA: California Department of Education, 2022); F. Carlson, *Big Body Play: Why Boisterous, Vigorous, and Very Physical Play Is Essential to Children’s Development and Learning* (Washington, DC: National Association for the Education of Young Children, 2011).
- 20 K. Byers-Heinlein et al., “Monolingual and Bilingual Children’s Social Preferences for Monolingual and Bilingual Speakers,” *Developmental Science* 20, no. 4 (July 2017): e12392; L. Singh et al., “Bilingualism Is Associated with Less Racial Bias in Preschool Children,” *Developmental Psychology* 56, no. 5 (May 2020): 888–896; L. Singh et al., “Cognitive Flexibility and Parental Education Differentially Predict Implicit and Explicit Racial Biases in Bilingual Children,” *Journal of Experimental Child Psychology* 204 (April 2021): 105059.
- 21 National Institute of Mental Health, Attention-Deficit/Hyperactivity Disorder, <https://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd>.
- 22 C. B. Marvin, E. Tedeschi, and D. Shohamy, “Curiosity as the Impulse to Know: Common Behavioral and Neural Mechanisms Underlying Curiosity and Impulsivity,” *Current Opinion in Behavioral Sciences* 35 (October 2020): 92–98.
- 23 K. T. Cost et al., “‘Best Things’: Parents Describe Their Children with Autism Spectrum Disorder Over Time,” *Journal of Autism and Developmental Disorders* 51 (December 2021): 4560–4574.
- 24 J. Fantuzzo, E. Tighe, and S. Childs, “Family Involvement Questionnaire: A Multivariate Assessment of Family Participation in Early Childhood Education,” *Journal of Educational Psychology* 92, no. 2 (June 2000): 367–376; R. Gibb et al., “Promoting Executive Function Skills in Preschoolers Using a Play-Based Program,” *Frontiers in Psychology* (December 2021): 5843; M. Yogman et al., “The Power of Play: A Pediatric Role in Enhancing Development in Young Children,” *Pediatrics* 142, no. 3 (September 2018): 1–17.
- 25 R. Parker, B. S. Thomsen, and A. Berry, “Learning Through Play at School – A Framework for Policy and Practice,” *Frontiers in Education* 7 (February 2022): 751801; C. Sinnema, A. Sewell, and A. Milligan, “Evidence-Informed Collaborative Inquiry for Improving Teaching and Learning,” *Asia-Pacific Journal of Teacher Education* 39, no. 3 (August 2011): 247–261; J. M. Zosh et al., “Accessing the Inaccessible: Redefining Play as a Spectrum,” *Frontiers in Psychology* 9 (August 2018): 1124.
- 26 R. Parker, B. S. Thomsen, and A. Berry, “Learning Through Play at School,” 751801.
- 27 B. Y. Hu et al., “Teacher–Child Interactions and Children’s Cognitive and Social Skills in Chinese Preschool Classrooms,” *Children and Youth Services Review* 79 (August 2017): 78–86; A. J. Mashburn et al., “Measures of Classroom Quality in Prekindergarten and Children’s Development of Academic, Language, and Social Skills,” *Child Development* 79, no. 3 (May 2008): 732–749; S. E. Rimm-Kaufman et al., “The Contribution of Classroom Setting and Quality of Instruction to Children’s Behavior in Kindergarten Classrooms,” *The Elementary School Journal* 105, no. 4 (March 2005): 377–394.

- 28 J. N. Futterer, R. J. Bulotsky-Shearer, and R. L. Gruen, “Emotional Support Moderates Associations Between Preschool Approaches to Learning and Academic Skills,” *Journal of Applied Developmental Psychology* 80 (April 2022): 101413.
- 29 S. N. Lang, S. Jeon, and E. Tebben, “Relationships Between Families and Head Start Staff: Associations with Children’s Academic Outcomes Through Home Involvement and Approaches to Learning,” *Early Education and Development* (January 2023): 1–18; S. Jeon et al., “Profiles of Family Engagement in Home- and Center-Based Early Head Start Programs: Associations with Child Outcomes and Parenting Skills,” *Early Childhood Research Quarterly* 53 (April 2020): 108–123; J. Fantuzzo, M. A. Perry, and P. McDermott, “Preschool Approaches to Learning and Their Relationship to Other Relevant Classroom Competencies for Low-Income Children,” *School Psychology Quarterly* 19, no. 3 (September 2004): 212–230.
- 30 K. L. Turnbull et al., “Family Routines and Practices That Support the School Readiness of Young Children Living in Poverty,” *Early Childhood Research Quarterly* 58 (October 2022): 1–13.
- 31 N. Forry et al., *Family–Provider Relationship Quality: Review of Conceptual and Empirical Literature of Family–Provider Relationships*, OPRE Report #2012-46 (Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2012); S. N. Lang, S. Jeon, and E. Tebben, “Relationships Between Families and Head Start Staff: Associations with Children’s Academic Outcomes Through Home Involvement and Approaches to Learning,” *Early Education and Development* (January 2023): 1–18.

Preschool/Transitional Kindergarten Learning Foundations in the Domain of Approaches to Learning

Children communicate their Approaches to Learning skills in a variety of ways, both verbally and nonverbally. Their communication may include their home languages, the language of instruction, a combination of languages, or the use of augmentative and alternative communication devices. It may also include nonverbal ways of communicating such as drawing and modeling with different materials or expressing through movement, actions, or role-play.



Strand: 1.0 — Motivation to Learn

When children work through and master challenging tasks or activities, they demonstrate **mastery motivation**. Mastery motivation plays an important role in children’s school readiness and academic skills. It encompasses a range of abilities that support learning, such as curiosity, initiative, perseverance, and engagement. **A growth mindset** also contributes to how children approach learning. The belief that abilities are not fixed and can change with practice is known as a growth mindset. When children believe effort, hard work, making mistakes, and taking risks improve their abilities and learning, they are more likely to develop a growth mindset and be more motivated to learn.

Sub-Strand — Curiosity and Interest**Foundation 1.1 Curiosity and Interest****Early
3 to 4 ½ Years**

Express interest in some familiar and new objects, people, and activities in their immediate environment. Seek information by exploring with their senses, describing their observations, and asking simple questions.

**Later
4 to 5 ½ Years**

Express interest in a broader range of familiar and new objects, people, and activities by exploring more extensively with their senses, describing their observations in greater detail, and asking more detailed questions.

Children may demonstrate curiosity and interest in varying ways, depending on individual and cultural differences. In some cultures children are not expected to ask questions to adults, while in other cultures they are encouraged to do so.

Early Examples

■ A child explores a flower by looking at it closely while touching the petals, the leaves, and the stem.

Later Examples

■ A child explores flowers by looking at them closely and touching the leaves as they compare them and notice the similarities and differences between them. The child expresses to a peer, “These flowers are furry and white, but these are yellow and smooth.”

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Foundation 1.1 Curiosity and Interest

Early
3 to 4½ Years

Later
4 to 5½ Years

Early Examples (continued)

● A child who is blind shows excitement and asks, “What is that?” when the teacher brings out bongos and begins to play them. The child holds out both arms and says, “What are they like?” indicating a desire to touch and explore the bongos manually.

A child who is playing by themselves overhears another child talking about going to the park over the weekend. The child turns to their peer and comments, “I go to the park, too. With my cousins! Who do you go with?”

A child flips through the pages of a new book with a teacher and points to an image in the book. The child communicates, “Look! A *doumbek*,”* and begins dancing. The teacher asks, “It is? Wow, I didn’t know that! How did you know what that was?” The child responds, “My *amty* [aunt in Arabic] has one!” The teacher asks the child if they would like to ask their *amty* if they could bring the *doumbek* for show-and-tell.

*A *doumbek* is a Middle Eastern drum-like instrument.

Later Examples (continued)

● A child shows excitement when the teacher brings out a *dizi*** during music time. The child asks, “What is that? A flute? How does it make that noise?” The teacher responds, “You are asking thoughtful questions. Do you want to hold it and try to figure out how to make sounds with it?”

During free playtime, a child with autism plays with toy frogs for the second day in a row and uses a communication tablet to ask, “What do frogs eat?”

During a painting activity, a child explores paints by mixing yellow and blue and communicates using Arabic and English, “I mixed yellow and blue to paint my favorite bird! Now it’s green!”

**A *dizi* is a Chinese transverse flute.

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Foundation 1.1 Curiosity and Interest

Early
3 to 4½ Years

Later
4 to 5½ Years

Early Examples (continued)

While making acorn flour* with the help of the teacher, a child touches the flour after it is ground and sifted and communicates, “It’s smooth now.”

*Acorn flour has historically been a food staple for some Native nations and tribal communities in California. It is made by grinding acorns using a mortar and pestle.



Science — The above foundation is similar to Science foundation 1.3 on asking questions. Both domains intentionally include foundations on showing curiosity and interest through active exploration, making observations, and asking questions. In Approaches to Learning, this foundation describes children’s disposition toward exploring the world and learning about objects, people, and activities in their environment.

Supporting Curious Learners

Children show natural curiosity as they explore their environment and make new discoveries. Teachers can support children in developing and sustaining their curiosity by creating safe, inviting environments where wonder and discovery are valued. Here are some ideas to support children’s curiosity:

- Regularly introduce new interactive objects, materials, and experiences and give children the opportunity to explore on their own. Children can find innovative ways to use objects or materials when they feel safe to explore and are given the opportunity to explore.
- Acknowledge and expand on children’s interests. When children show interest in a particular topic or activity, the teacher can provide materials and books or tailor learning experiences that focus on this topic. For instance, if a group of children show interest in jungle animals, the teacher could add books to the room library or create an art activity about jungle animals. It can also be helpful to establish a relationship with a child’s family to learn more about their interests.
- Ask children “what,” “why,” and “how” questions, in their home language when possible, to promote wonder and reward their questions by responding enthusiastically. When teachers do not know the answer to children’s questions, they can model curiosity for children. For instance, a teacher might say, “That’s a good question. I was wondering that too. Let’s read this book to find out,” or “Let’s ask someone to help us figure this out.” Modeling solutions helps children begin to identify their own strategies the next time they have a question.
- Connect with families to learn about children’s culture and backgrounds and encourage children to share aspects of their culture (such as music, dances, or family traditions) with others. When children see themselves represented in learning experiences, they are drawn in and interested in learning more. Learning about others can also evoke curiosity and wonder among peers. For instance, children may find aspects of another child’s culture fascinating and want to learn more about it.

Sub-Strand — Initiative
Foundation 1.2 Initiative
**Early
3 to 4 ½ Years**

Demonstrate initiative by starting activities (such as simple play scenarios), initiating social interactions (such as helping others), and seeking solutions to problems.

**Later
4 to 5 ½ Years**

Demonstrate initiative by starting activities (such as detailed and more complex play scenarios), initiating social interactions (such as helping others) more often, and seeking solutions to problems more persistently.

Children may demonstrate initiative in varying ways based on individual and cultural differences. In some cultures, children learn to observe others, then join in to work together. In other cultures, children are encouraged to demonstrate initiative independently.

Early Examples

■ During the cleanup time, a child finishes picking up the blocks they were playing with and, with teacher encouragement, begins to help a peer put away toy cars in bins.

● During outdoor play, a child approaches their peer and tells them, “I am a *hunwut*” (*hunwut* is bear in Luiseño, an Indigenous language), and begins acting like a bear. “What are you?”

Later Examples

■ During the cleanup time, a child observes a peer who is struggling to get a drawer open to put away toy cars. After a minute of watching, the child joins in and they open it and put away toy cars together.

● During play, a child initiates a game with their peers. The child communicates using a mix of Tagalog and English, “Let’s play zombies now. You wear the green mask and try to get us. We’re safe if we run to the castle.”

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Foundation 1.2 Initiative

Early
3 to 4½ Years

Later
4 to 5½ Years

Early Examples (continued)

A teacher announces, “Time to go play outside! Let’s get our jackets on!” The teacher notices a child trying repeatedly to zip up their jacket and waits to see if the child will need help (rather than jumping in to offer help immediately). The child begins to express some frustration and asks the teacher for help, at which point the teacher gets the zipper started and asks the child to zip up the rest.

A child raises their hand and shouts, “Me!” when the teacher asks who would like to be the first to help set up maracas* for a music activity.

* Maracas are a type of percussion instrument that make a noise when they are shaken. They are used in some genres of Latin and Caribbean music.

Later Examples (continued)

A child with cerebral palsy approaches their teacher during free play and communicates, “What can I play?” The teacher helps them exercise their initiative by bringing out an activity choice board.** The child points to an image of a paintbrush and responds, “I’m going to paint an elephant. My mom says an elephant is really lucky.” The child then asks the teacher for their special (adaptive) paintbrush to paint.

A child tries to unzip their jacket, but the zipper is stuck. The child tries jiggling the zipper open, and when that does not work, they pull the jacket off over their head.

**A choice board is a visual support menu of activity options that allow children to communicate what activity they would like to engage in.

Encourage Children to be Self-Starters

Children show initiative in various ways—by starting activities, initiating interactions, and contributing to group projects. Teachers can encourage children to continue being self-starters by doing the following:

- Regularly offering children meaningful choices to help children practice making their own decisions. For example, free choice time gives children the opportunity to decide what activity they want to engage in, how, and with whom. Having too few choices may be too limiting for some children, whereas too many choices may overwhelm other children’s ability to persist and deeply engage in a task.
- Giving children sufficient time to try doing things on their own. For instance, if a child is just learning to tie their shoes, it may take them a while to complete this task. Even so, completing it on their own will help them feel competent.
- Providing children opportunities to take on various responsibilities and roles such as becoming a line leader or passing out snacks.

Sub-Strand — Engagement
Foundation 1.3 Engagement
**Early
3 to 4 ½ Years**

Actively engage by focusing and concentrating on activities for brief periods of time with adult support.

**Later
4 to 5 ½ Years**

Actively engage by focusing and concentrating on activities for longer periods of time with less adult support.

In general, a child may engage in an activity for about 3–12 minutes in the Early Foundation age range and for as long as 8–20 minutes in the Later Foundation age range. A child’s level of engagement will depend on a variety of factors, including individual characteristics, level of interest in an activity, the learning environment, and the support they receive from adults.

Early Examples

- A child spends about 10 minutes of playtime building a tower of blocks alongside peers.
- A child becomes engaged in a short story and answers the teacher’s simple questions about the story.

A child focuses on sorting colored bears for a few minutes during a sorting activity, but starts to lose interest until their teacher reengages them by asking, “Can you put the blue bear in its pile?” The child places the blue bear in the blue pile. The teacher responds enthusiastically, “That’s the blue pile! How about we try the yellow bear. Where does the yellow bear go?” The child continues the activity with their teacher.

Later Examples

- A child spends about 15 minutes of free playtime playing with magnetic tiles, paying close attention to the house structure they are building.
- A child often becomes engaged in longer stories and asks the teacher questions about the characters and settings in the story.

A child concentrates on their pattern while beading a preschool graduation necklace and often shows the teacher their progress. The next day during free choice time, the child asks if they can keep working on their necklace.

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Foundation 1.3 Engagement

Early
3 to 4½ Years

Early Examples (continued)

A child dances to *folklórico** music for most of their 10-minute music time. The child communicates in Spanish, “My mom taught me this.”

**Folklórico* is a Spanish-language term that means folkloric. It refers to traditional dances from different cultures and regions of Mexico.

Later
4 to 5½ Years

Later Examples (continued)

A child plays for several minutes with dinosaurs and names them. The child finds one they cannot classify and stops to stare at it for a while before asking a peer in a mix of English and their home language, “What type of dinosaur is it? A triceratops?”

A child with a developmental delay arranges rocks from small to large for an art project, but two rocks are similar in size. The child stares at these two rocks for a while and looks around for someone to ask for help, but does not identify anyone. The child then places the two rocks side by side and is able to decide which one is larger.

Supporting Engaged Learners

Learning environments can often be very stimulating, and it can be easy for some children to become distracted when there is a lot of visual or auditory input or a lack of engaging material. However, activities and environments can be designed to maximize children's level of engagement. Here are a few strategies that teachers can use to support children's engagement:

- Establish clear routines and a predictable environment to help children focus and engage in learning; for example, have a predictable schedule with visual cues that children can follow throughout the day.
- Provide various spaces with clear cues about what can be done in each area, ideally with limits on group size so children do not feel crowded. For instance, designating an art area with photos of how different art supplies can be used allows children to fully engage in art-making using a range of materials available to them. It may also be helpful to create a separate space that children can choose when they feel that they need to get away from distractions to concentrate, for instance, a pillowed area with blankets or a table that is in a corner.
- Rotate materials regularly to promote interest and excitement for new materials, for instance, playing with pots and pans for music time one week and playing with rain sticks outside another week.
- Plan for small-group activities with clear goals and where each child can meaningfully participate. Without clear goals or roles, children may disengage easily. Children with disabilities may need specific accommodations such as adaptive equipment or materials such as an adaptive pencil or communication device to fully participate in group work.

Sub-Strand — Perseverance
Foundation 1.4 Persisting Despite Difficulties
**Early
3 to 4 ½ Years**

Demonstrate persistence, with adult support, when engaging in an activity despite encountering setbacks or boredom. Make an effort, with adult support, to cope with emotions that arise (for instance, frustration, sadness, anger, excitement), although may shift to another activity after a short while.

**Later
4 to 5 ½ Years**

Demonstrate persistence for longer periods of time when engaging in an activity despite encountering setbacks or boredom. More consistently cope with emotions that arise (for instance, frustration, anger, sadness, excitement) and can continue engaging in an activity with less adult support.

Early Examples

- A child starts a challenging puzzle but becomes frustrated or bored after a few minutes. When the teacher offers to help find a few matching pieces, the child spends another minute on the puzzle and then announces they want to do something else.
- A child expresses frustration because a part of the train track they are building does not fit properly. The child then tries a few times before shifting to play with wooden logs.

Later Examples

- A child works hard on an art project that has captured their interest. Despite the project taking a long time to complete and encountering setbacks, they spend all of their free playtime on it over two days.
- Outdoors, a child expresses frustration when their hula hoop repeatedly falls down. The teacher says, “I love that you keep trying.” The child picks up a smaller hoop and is able to use it without further teacher support.

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Foundation 1.4 Persisting Despite Difficulties

Early
3 to 4½ Years

Early Examples (continued)

While looking outside for rocks for an art activity, a child gets bored and wanders to the swing set. Knowing this particular child enjoys singing and dancing, the teacher reengages them by suggesting they skip and sing a song together as they both look for rocks. The child shows excitement and begins to skip and sing with the teacher as they continue collecting rocks for the art activity.

A child tries to dress a doll with a sweater, but they are not able to fit the head through the sweater's neck hole. After a few minutes, they ask the teacher for help using a mix of Spanish and English.

While making a draft canoe out of cut paper towel rolls, a child becomes frustrated and starts to cry when the glue will not hold. The teacher offers to help hold the pieces and the two reglue them together. The child then communicates that they want to take a break from the project and come back later.

Later
4 to 5½ Years

Later Examples (continued)

During an indoor scavenger hunt for shapes, a child feels upset that a peer is finding more shapes than they are. The child moves away from that peer and looks for shapes with a different peer until they have finished their scavenger hunt.

A child with an orthopedic impairment rolls their wheelchair onto the basketball court during the outdoor play period. They shoot the ball and miss, then adjust their sitting position to a different angle and continue shooting the ball over and over.

Supporting Persistent Learners

With teacher support, children can learn to persist through difficulties and seek out challenges because they enjoy learning and mastering skills. Here are some ways to support children's ability to persist:

- Provide children with opportunities to engage in challenging activities based on their abilities. For instance, while one child may find it difficult to use scissors to cut a piece of paper, another child may use scissors easily. A teacher might provide more opportunities for the first child to practice cutting paper in straight lines while giving the second child curved or angled patterns to cut.
- Provide children with just enough support and encouragement to help their learning progress. Teachers can help children when they need it (when they ask for help or when they are showing signs that they are getting frustrated) and slowly allow them to persist with less support.
- Teachers can recognize children's efforts even when they are experiencing difficulties and describe the strategies and actions children are using to persist in challenging tasks, for example, "I see that you took a moment to pause. That will help you think of other solutions."

Strand: 2.0 — Executive Functioning

Early development of executive functions is important for children’s learning and how they adapt across a range of contexts. Executive functions are cognitive processes that play an important role in children’s problem-solving, planning, and decision-making. Components of executive functioning include the foundations in this strand on working memory, inhibitory control, and flexibility. Inhibitory control includes two cognitive processes: (1) managing impulsive behaviors and reactions and (2) managing attention despite distractions.

Stress and strong emotions can disrupt children’s working memory ability, ability to manage impulsive behaviors, and cognitive flexibility, making it difficult for children to be reflective and use executive functions to pursue goals and solve problems. Different levels of stress can result from a lack of a good night’s sleep, being hungry, feeling sick, or experiencing trauma. Strong emotions can include anger, sadness, fear, excitement, or frustration.

Sub-Strand — Working Memory
Foundation 2.1 Working Memory
**Early
3 to 4 ½ Years**

Hold approximately one to two pieces of information in their mind for a short time and use the knowledge to guide behavior when performing tasks and engaging in play, with adult support.

Early Examples

- While playing a game of Red Light, Green Light facilitated by the teacher, a child runs when hearing “red light.” The teacher reminds them that “red light” means stop. After this reminder, the child runs when hearing “green light” and then stops when hearing “red light.”
- During story time, the teacher turns the page of a book and asks, “Was the little bunny angry or sad? What did they say?” A child responds in their home language, “He is sad he dropped his ice cream.”

**Later
4 to 5 ½ Years**

Hold approximately two to three pieces of information in their mind for longer periods of time and use the knowledge to guide behavior when engaging in multistep tasks and more complex play, with less adult support.

Later Examples

- While playing a game of Simon Says facilitated by the teacher, a child accurately follows movements as instructions increase from one step to multiple steps (for example, from “Simon says, ‘Pat your head’” to “Simon says, ‘Pat your tummy, touch your toes, and jump’”). The teacher demonstrates the movements as they say the phrases.
- At the end of a story, the teacher asks the children, “What happened in the story we just read?” Children respond and build on each other’s responses, explaining the three major events in the story in the order they happened while highlighting the main characters.

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Foundation 2.1 Working Memory

Early
3 to 4½ Years

Early Examples (continued)

When free paint time is over, the teacher tells the children to put away the art supplies and wash their hands before sitting on the carpet. A child puts away their art supplies and goes to the carpet, forgetting to wash their hands. After a visual reminder from the teacher, the child goes to wash their hands.

A child volunteers to get the ball and cones to play soccer with peers. The child then approaches the bin with balls, grabs a soccer ball, and gets the cones from another location.

A child plays a memory game with six matching pairs of cards. When their peer takes a turn, the child observes the peer turn over a card with an apple on it. During the child's next turn, they turn over a different card with an apple on it. They remember where the first apple card is and pick it up to make a match.

Later
4 to 5½ Years

Later Examples (continued)

A child uses the visual sequence of handwashing to show a peer the four steps of handwashing. Then they show their peer how they wash their own hands, without glancing back up at the visual.

Playing with blocks, a child stacks some blocks and counts that there are four. Then in a separate pile, they stack some blocks and count that there are three. The child approaches their peer and communicates, "Pass me a block. I need one more so they match."

A child plays Snakes and Ladders and counts out a particular number of rungs on the ladder while also keeping track of whose turn is next. The child communicates to their peer using a mix of Arabic and English, "It's your turn now."

As children transition to early education programs, they may need support in adjusting their behaviors to meet the expectations of the new environment. Children come from diverse home environments, cultural backgrounds, and abilities that may influence how they regulate their impulses and reactions and delay gratification in new settings. Teachers can help children adapt to a new environment by getting to know children as individuals (for example, their likes and dislikes, temperament, families) and engaging in empathic and warm interactions with them.

Sub-Strand — Inhibitory Control

Foundation 2.2 **Managing Impulsive Behaviors**

Early **3 to 4 ½ Years**

Demonstrate emerging ability to manage habitual reactions (habits that are not useful in a particular context), impulsive behaviors (acting on a whim), and delaying gratification (resisting temptation for an instant reward) with adult support.

Early Examples

- When reminded by the teacher, a child raises their hand and waits to be called on before sharing an answer.
- A child who is excited about playing outdoors begins to run to get in line before outdoor play but walks after being reminded by an adult.

Later **4 to 5 ½ Years**

Manage habitual reactions (habits that are not useful in a particular context), impulsive behaviors (acting on a whim), and delaying gratification (resisting temptation for an instant reward) with less adult support.

Later Examples

- A child raises their hand and waits to share an answer during story time without needing to be reminded by the teacher.
- A child who is excited about playing outdoors walks to get in line before outdoor play, telling themselves out loud, “Walking feet. Walking feet.”

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Foundation 2.2 Managing Impulsive Behaviors

Early
3 to 4½ Years

Early Examples (continued)

A child waits for their turn to play with a new toy robot but jumps ahead of the next child in line. The teacher reminds them that there are a few children ahead of them. “It will be your turn soon. Let’s wait a little longer.” The child then gets back in line and waits their turn.

A child becomes upset and throws down the toy they are playing with when the teacher announces the end of free playtime. Acknowledging the child’s frustration, the teacher expresses to the child that they will put the toy in a specific place to play with in the afternoon. After a minute, the child cleans up the toy by putting it in its basket.

A child shouts, “What happens next?” during story time and the teacher reminds them that they will have to wait a few more pages to find out. They wait patiently after the teacher’s reminder.

Later
4 to 5½ Years

Later Examples (continued)

When getting in line with peers to go outside, a child who tends to be hyperactive walks to the end of the line to be near their teacher. They communicate in Vietnamese, “I came back here. They are walking slow.” The teacher responds, “You remembered you can walk by me instead of pushing your peers. You are really thoughtful!”

A child notices their favorite snack, *moi moi*,* is being served today. While the child waits for their snack, they distract themselves by doing a happy dance.

**Moi moi* is a popular Nigerian dish of steamed black-eyed peas.

Foundation 2.3 **Managing Attention and Distractions**

Early **3 to 4 ½ Years**

Demonstrate an emerging ability to ignore distractions and interruptions during independent or group activities; however, often need adult support to manage attention when distracted or interrupted.

Later **4 to 5 ½ Years**

Demonstrate an emerging ability to ignore distractions and interruptions during independent or group activities with less adult support.

While younger children can manage attention and distractions for shorter periods of time, especially in activities they enjoy and have interest in, older children can manage attention and distractions for longer periods of time, even in activities they may find less enjoyable or interesting.

Early Examples

■ A child stops playing with blocks during free play because they notice a new adult in the room. The teacher reminds the child that they have only five more minutes of free playtime, so they go back to playing with blocks.

● During story time, a child gets distracted by a garbage truck outside the window. When the garbage pickup is finished, to refocus the child's attention the teacher asks the child to help turn the page. The child turns the page and reengages with the story.

Later Examples

■ A child notices a peer's grandparent walk in to pick up their grandchild early during free play. The child glances up at the exchange but continues to arrange sticks and leaves as part of their art activity.

● During story time, a child glances up and points out the window at a garbage truck. The teacher nods and then gently puts their hand on the child's shoulder and the child quickly turns their attention back to the story.

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Foundation 2.3 Managing Attention and Distractions

Early
3 to 4½ Years

Later
4 to 5½ Years

Early Examples (continued)

A child with a traumatic brain injury is engaged during free play, then begins crying, runs to the back of the room, and sits alone. The teacher follows and asks what is wrong. The child complains that there is too much noise in the room and that it should stop. The teacher arranges for the assistant teacher to take the child outside where it is quiet and the two of them can play for a while before returning to the room.

While pretending to make *tamales** with play dough, a child stops and tries looking out the window because they hear two children playing tag outside. The teacher tells them in their home language, “We’ll go outside after snack time. Right now, it’s free playtime.” The child then goes back to playing with play dough.

* *Tamales* are a Mesoamerican dish made with *masa* (ground corn meal) that is steamed in a corn husk or banana leaf.

Later Examples (continued)

While a child is concentrating on drawing a symbol from their dad’s tattoo, another child bangs on the table. So the child moves to a smaller table nearby, explaining that it’s too noisy and they want to finish their drawing.

A child continues to play that they are making hot pot** in the play kitchen with their peer, despite children walking around them and grabbing other play food items.

** Hot pot is a dish cooked in regions of East and Southeast Asia. It is made by adding meat or vegetables to a pot of broth that is continually simmering.

Sub-Strand — Flexibility
Foundation 2.4 Flexibility
**Early
3 to 4 ½ Years**

Demonstrate emerging ability to shift behavior and think about things in a new way, with adult support.

Early Examples

■ After sorting a deck of cards by color over and over, a child sorts the cards by shape, following an adult’s modeling.

● A child plays with a doll and says, “Aw, the baby crying! He’s hungry.” The teacher contributes to the child’s play by offering a roller and asking, “Do you want to feed the baby with this bottle?” The child grabs a roller and pretends it is a bottle.

While constructing a bridge, a child wants to make the bridge higher. A teacher asks them what they could use besides blocks to make the bridge higher, while pointing to the shelf of materials available. The child takes out wooden logs and corks from the bins to make the bridge higher.

**Later
4 to 5 ½ Years**

More consistently shift behavior and think about things in a new way, with less adult support.

Later Examples

■ After sorting a deck of cards by color over and over, a child begins to sort the cards by shape, without adult modeling.

● A child plays with a doll and says, “Aw, the baby crying! He’s sleepy.” The child gathers some leaves to make a pretend bed and lays down the doll.

A child follows the teacher’s movements during a music activity designed to support children’s flexibility. When the teacher moves the baton side to side, the child moves their baton side to side for a few minutes. The teacher tells the children, “Now when I move side to side, you move up and down, and when I move slowly, you move yours fast.” The child can quickly shift how they were previously moving their baton to doing the opposite movements as the teacher.

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Foundation 2.4 Flexibility

Early
3 to 4½ Years

Early Examples (continued)

A child sings “Head, Shoulders, Knees, and Toes” along with a teacher and other children in English. When the teacher begins the song again in Karuk (an Indigenous language), the child flexibly follows the song in Karuk along with the motions.

Later
4 to 5½ Years

Later Examples (continued)

Hearing a peer use the word “铅笔” (pencil in Mandarin), a child asks, “What? What did you call that?” The peer repeats the word and the child asks, “You mean pencil?” while holding up a pencil. The child tells the peer, “My mom says *lápiz*,” (pencil in Spanish), and the two repeat the Mandarin and Spanish words back and forth to each other.

Supporting Children’s Executive Functioning Skills

All children have the potential to develop executive function skills. Teachers can help children build these skills by giving them various opportunities to practice. Here are some of the ways teachers can create contexts where children practice executive function skills:

- Create an environment that encourages imaginary play. During imaginary play, children use their working memory to hold symbols or characters in mind to play a role, for example, pretending to be a doctor and listening to a teddy bear’s heartbeat. They also act with flexibility when they use a familiar object to represent a new object, for example, using headphones as a stethoscope.
- Read to children and encourage children to tell stories. As children keep in mind parts of stories or books (such as settings, people, objects) and share details with others, they use their working memory.
- Provide various opportunities for play that match children’s abilities (not too difficult or too easy). Children exercise their ability to inhibit behaviors or impulses when they play with others, for example, sharing toys or waiting in line to go down a slide. Children also use inhibition, flexibility, and working memory when playing games such as Simon Says and I Spy, doing match and sorting activities, working on puzzles, and playing board games.
- Provide various opportunities for children to regulate their behavior through big body movements such as rolling, running, climbing, chasing, tumbling, and rough-and-tumble play. Engaging in active physical play enhances children’s inhibitory control, especially for children with high energy levels.

Strand: 3.0 — Goal-Directed Learning

Executive functioning skills are important building blocks for children’s goal-directed learning. Children’s working memory underlies their ability to make plans. Using working memory, children can keep steps and goals in mind. They can also learn to manage their impulses and resist distractions so that they can stay focused on problem-solving and use their flexibility to think of creative and effective solutions. Children’s executive functioning skills also support how they play and problem solve with others.

Sub-Strand — Problem-Solving
Foundation 3.1 Planning
**Early
3 to 4 ½ Years**

Demonstrate emerging ability to set and carry out simple goals (for example, one-to two-step plans and goals), with adult support.

Early Examples

- A child gathers materials needed to make an animal habitat of their choice (such as leaves, toy animals, and dirt), but needs to be reminded to get a shoebox to place the habitat in.
- Playing in the kitchen play area, a child communicates, “Going to cook jollof rice”* and places a toy pan on the stove.

*Jollof rice is a rice dish from West Africa made with long-grain rice, tomatoes, onions, spices, vegetables, and meat.

**Later
4 to 5 ½ Years**

Demonstrate ability to set and carry out more complex plans (for example, two-to three-step plans and goals), with less adult support.

Later Examples

- A child expresses that they want to make a necklace. The teacher asks, “What will you need to make a necklace?” The child pauses before selecting the supplies. They decide to use string, beads, and a plate.
- During play, a child wants to create a puppet show. They gather their peers and tell them they will need stuffed animals to watch the puppet show, a box to use as a stand for the puppets, and puppets.

A child plans to take toy cars outside to slide them down the slide. The child then grabs their jacket, their hat, and a basket to put the cars in and tells the teacher in their home language, “I’m ready.”

A child decides to paint during free playtime and gathers a paintbrush, paint, paper, and a cup. The child then asks the teacher for help filling up the cup with water and getting paper towels.

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Foundation 3.1 **Planning**

Early
3 to 4½ Years

Later
4 to 5½ Years

Early Examples (continued)

After deciding to create a star and tree with play dough, a child approaches their teacher. The teacher asks them in their home language, “If you are going to make a star and tree, what shapes do you need?” With help from the teacher, the child gathers play dough and looks for the star and tree play dough cutter, and they begin to make the shapes.

During play, a child with hearing loss who wears a hearing aid shows their teacher that they want to play music band with peers. The teacher asks them, “Are you going to play with the guitar? Who will be the singer?” The child points to a peer and says, “Tatiana will be the singer,” then shows their peer where to get a microphone.

Foundation 3.2 Reflecting and Analyzing

Early 3 to 4 ½ Years

Make attempts to adjust a problem-solving approach or strategy by reflecting on and analyzing their current approach, with adult support.

Early Examples

- While working on a puzzle with a teacher, a child selects puzzle pieces at random and tries to fit pieces together. When that does not work, the teacher suggests they try looking for pieces of the same color. The child selects pieces of the same color but still cannot fit the pieces together. The teacher then suggests slowing down and looking at the edges of the pieces. The child observes the edges before selecting their next piece and matches the pieces after only a few tries.
- A child tries to reach a paper towel behind the sink. When they cannot reach it, they try extending their arm. They still cannot reach it, so the teacher suggests the child use a stool to stand on. After extending their arm again while standing on the stool, they successfully reach the paper towel.

A child builds a marble run and, with the teacher's help, shifts the incline to see if it changes how far the marbles go.

Later 4 to 5 ½ Years

Make attempts to adjust a problem-solving approach or strategy by reflecting on and analyzing their current approach, with less adult support.

Later Examples

- A child who is trying to fit together a puzzle uses all the yellow pieces first. They realize that the pieces are not fitting together. The teacher notices the child is stuck and responds, "Hmm. This is tough! You looked at the colors, what can you try next?" The child tries a different approach by looking at the edges of the pieces and is able to fit the puzzle pieces together.
- A toy car gets stuck under the reading cabinet. A child tries using their arms to reach under the cabinet. When that does not work, they pause and look around the room. They see a toy broom and use it to get the car out from under the reading cabinet.

A child plays with a ball maze toy, and as they adjust it to get the ball through the maze, it gets stuck. The child continues to turn the toy in a new direction to get the ball through the maze.

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Foundation 3.2 Reflecting and Analyzing

Early
3 to 4½ Years

Later
4 to 5½ Years

Later Examples (continued)

A child who is peeling sticks becomes frustrated when the stick's skin keeps breaking. The child observes the teacher, who is also peeling a stick, then turns their stick around and is able to get long pieces of bark off at once.

Sub-Strand — Collaborative Effort
Foundation 3.3 Problem-Solving Together
**Early
3 to 4 ½ Years**

Collaborate with peers in problem-solving during play and learning activities, sometimes for a short period of time and sometimes longer.

**Later
4 to 5 ½ Years**

Engage in extended collaborative problem-solving during play and learning activities. Communicate with peers about how to solve a problem and help peers when needed.

Early Examples

- When building a tower with a peer, a child gets a new block to put on the tower as their peer is stacking blocks. The child spends a few minutes building the tower with their peer before moving on to a new activity.
- During a small-group activity, a child struggles to identify the letter “B” from a small group of letters. The teacher asks other children to help their peer. Another child holds up a letter card with a “B” on it and says, “It looks like this.” The child searches, finds the matching letter “B,” and holds it up for everyone to see. A teacher praises the children, “That was great teamwork!”

Later Examples

- A group of children works together over multiple days to build a castle with multiple towers. A child asks, “Will it fall when we are gone?” Another child suggests putting a barrier around their castle. They then work together to form the barrier.
- During a math activity that the teacher set up to help children work with their peers to problem solve, a child tries to figure out how to get a food scale to five pounds. To help their peer, one child brings pencils, crayons, and a play food item and another child brings books to try to get enough weight on the scale.

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Foundation 3.3 Problem-Solving Together

Early
3 to 4½ Years

Early Examples (continued)

When working on a puzzle with a peer, a child tries to decide which puzzle piece to use. Their peer picks a piece and says, “This one. It’s this piece!”

During play in a loft area, three children engage in building a fort together. Two children pull up a blanket as another child tries to wedge the blanket between chairs.

Later
4 to 5½ Years

Later Examples (continued)

A child notices a peer is upset because another peer took their spot on the reading carpet. The child asks the upset peer, “Did you tell her you were there first?” Then the child asks the peer who took the other’s spot, “Did you know that was his spot first?” The child then suggests that the upset peer could tell the teacher what is going on.

Along with other children, a child decides how to divide up classroom chores, such as cleaning tables, putting chairs on tables, and rolling up mats.



History–Social Science — The previous foundation is similar to History–Social Science foundation 3.7 on collaborative problem-solving. Both domains intentionally include foundations on problem-solving with others. In Approaches to Learning, this foundation describes how children employ initiative, persistence, and executive function skills when collaborating and working on solving problems with others.

Foundation 3.4 Understanding Others
**Early
3 to 4 ½ Years**

Notice, with adult support, that others have different approaches and preferences, although often have difficulty accepting others' approaches or preferences.

**Later
4 to 5 ½ Years**

Demonstrate understanding and explain that others can have different approaches and preferences and more consistently accept others' approaches and preferences, with less adult support.

Early Examples

■ During a family-style mealtime, a child is tasked with handing out bananas and apples to their peers. The child starts off handing out mostly apples because they like apples. Then a peer tells them that they prefer a banana, and the child begins asking peers what they like before handing them a banana or an apple.

● A child works with a peer to build a bridge for their toy cars. The peer uses blocks to make their side of the bridge taller. The child continues using books for their side. The teacher points out that the bridge may be uneven, and the child switches to using blocks.

Later Examples

■ A child who is Deaf helps at snack time. Before handing peers a milk pouch, they sign, "You drink milk?" to each child, then give a milk pouch to peers who say or indicate "Yes."

● When creating sandcastles in the sandbox, a peer approaches a child and communicates, "Let's make the biggest sandcastle ever! Use the big cup, not the small one, so it'll be big." The child keeps using the small cup, but when they notice the big cups are producing bigger castles, they switch to using the big cups.

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■ ● Matching icons indicate alignment of examples across age-ranges

(continued)

Foundation 3.4 Understanding Others

Early
3 to 4½ Years

Early Examples (continued)

A child asks, “How come you did that with your hands?” after observing a peer saying goodbye to their uncle in the morning by giving them a fist bump and a hug. Then the child pays attention while the teacher explains that families say goodbye to each other in different ways.

Overhears a peer saying, “*guau, guau*” (“woof, woof” in Spanish) while playing with a toy dog. The child tells their peer, “No, a dog says ‘woof!’” After the teacher explains that people use different words to make animal sounds, the child replies, “Well, my dog says ‘woof,’” and picks up another dog to play with alongside their peer.

Before going to different activity centers, a child comments to a peer, “Are you going to blocks again? I am going to arts!”

When getting ready for circle time on a carpet, a child communicates to a peer using a mix of Spanish and English, “You always sit there. I sit here.”

Later
4 to 5½ Years

Later Examples (continued)

A child notices their peer is using a string to lace a precut animal shape but is not following the “one end to another” instructions, and the laces get crisscrossed. They remind their peer, using the peer’s home language, “No, you have to go one and then the next.” The peer responds, “No, I want it like this.” The child shows the teacher that their peer is lacing a new way. The teacher responds, “It’s OK! We can all lace our animals differently.”

In dramatic play, a child describes the plan to a peer, “You going to be mom again? You are always the mom.” The peer nods, “Yes,” and the child replies, “OK, I will be the doctor and you be the mom.” A new peer joins and wants to play the mom, too. The child tells the new peer, “You can’t be mom or doctor. He’s always mom. You can be the grandma or baby.”

Supporting Children’s Problem-Solving Skills

Pausing and reflecting are important skills for how children plan and problem solve. Pausing interrupts their impulse to act on a whim and allows for reflection on the current situation. Reflection involves paying attention to and understanding the problem at hand to come up with an effective plan. With adult support, children can learn to be effective problem solvers. Here are some strategies that can support children’s problem-solving skills:

- Provide children with opportunities to play and work together, especially on challenging tasks that draw on their imagination, for example, building a structure with various materials or working together to figure out how many coins or beans it takes to sink a toy boat. Children learn to communicate, discuss options, and compromise when they work with others.
- Model problem-solving, for instance, “Hmm. I planned an outdoor activity today, but it’s raining now. We were going to play soccer! What should we do now? [pause]. If it is not raining tomorrow, we can play soccer tomorrow. Today we can play crab soccer indoors or hot potato.”
- Give children time and offer gentle reminders to pause when they face a problem. Offer developmentally appropriate guidance, such as an open-ended question to help them think of a solution while describing what they are doing, for example, “You tried using the smaller blocks to make the tower taller. What other blocks can we use to make the tower more stable?” Teachers may also model how to solve the problem, if needed.

Glossary

adapt. Modifying or adjusting behavior to meet the demands of the situation.

attention-deficit/hyperactivity disorder (ADHD). A neurodevelopmental disorder marked by an ongoing pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development. Symptoms impact the quality of social, school, or work functioning.

autism. A developmental disability significantly affecting communication and social interaction. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.

delay gratification. Adjusting one's behavior and impulses to postpone immediate reward to obtain a larger, more desired, or more pleasurable reward in the future.

executive function. Cognitive processes of planning, managing behavior and attention, holding information in mind, and applying the information to complete tasks and goals. This includes processes of inhibitory control, working memory, and cognitive flexibility.

flexibility. Ability to think in new ways and adjust behavior based on needs.

growth mindset. The belief that abilities are not fixed and can change with practice.

guided play. Child-directed exploration and play with adult scaffolding and support toward learning goals.

impulsive behaviors. Behaviors that have little or no forethought or consideration of the outcomes or consequences of an action.

inhibitory control. Ability to manage impulses, reactions, emotions, and attention. Ability to delay gratification and adjust behaviors to meet the expectations of a situation.

mastery motivation. The motivation to remain engaged in a challenging task or activity, solve a problem, or master a skill.

school readiness. Skills, knowledge, and attitudes that develop from birth to school age in the areas of physical, cognitive, language, literacy, and social–emotional development that are necessary for success in school.

social conventions. Rules and practices that have been established as behavioral norms in an environment.

temperament. Emotional, behavioral, and physiological dispositions and ways of relating to the world that are associated with one’s activity level, self-regulation, sociability, mood, and distractibility.

verve. Preference and enthusiasm toward environments that are active and filled with a lot of interactions and multiple activities.

working memory. Ability to keep and manipulate information in mind for a brief period of time.

References and Source Materials

- Ahmed, S. F., M. Kuhfeld, T. W. Watts, P. E. Davis-Kean, and D. L. Vandell. 2021. "Preschool Executive Function and Adult Outcomes: A Developmental Cascade Model." *Developmental Psychology* 57 (12): 2234.
- Alcalá, L., B. Rogoff, R. Mejía-Arauz, A. D. Coppens, and A. L. Dexter. 2014. "Children's Initiative in Contributions to Family Work in Indigenous-Heritage and Cosmopolitan Communities in Mexico." *Human Development* 57 (2–3): 96–115.
- Bernier, A., M. H. Beauchamp, A. A. Bouvette-Turcot, S. M. Carlson, and J. Carrier. 2013. "Sleep and Cognition in Preschool Years: Specific Links to Executive Functioning." *Child Development* 84 (5): 1542–1553.
- Blair, C. 2012. "Stress Relief Can Be the Key to Success in School." *Scientific American Mind* 23 (4).
- Blair, C., and C. C. Raver. 2015. "School Readiness and Self-Regulation: A Developmental Psychobiological Approach." *Annual Review of Psychology* 66: 711–731.
- Brown, S., and C. Vaughan. 2009. *Play: How It Shapes the Brain, Opens the Imagination, and Invigorates the Soul*. New York, NY: Avery/Penguin Group USA.
- Bustamante, A. S., and A. H. Hindman. 2020. "Construyendo en la Fuerza: Approaches to Learning and School Readiness Gains in Latino Children Served by Head Start." *Early Childhood Research Quarterly* 52: 124–137.
- Byers-Heinlein, K., D. A. Behrend, L. M. Said, H. Girgis, and D. Poulin-Dubois. 2017. "Monolingual and Bilingual Children's Social Preferences for Monolingual and Bilingual Speakers." *Developmental Science* 20 (4): e12392.
- California Department of Education. 2022. *Creating Equitable Early Learning Environments for Young Boys of Color: Disrupting Disproportionate Outcomes*. Sacramento, CA: California Department of Education. <https://www.cde.ca.gov/sp/cd/re/documents/boysofcolor.pdf>.
- Carlson, F. 2011. *Big Body Play: Why Boisterous, Vigorous, and Very Physical Play Is Essential to Children's Development and Learning*. Washington, DC: National Association for the Education of Young Children.
- Carlson, S. M. 2005. "Developmentally Sensitive Measures of Executive Function in Preschool Children." *Developmental Neuropsychology* 28 (2): 595–616.

- Coppens, A. D., and L. Alcalá. 2015. "Supporting Children's Initiative: Appreciating Family Contributions or Paying Children for Chores." *Advances in Child Development and Behavior* 49: 91–112.
- Coppens, A. D., L. Alcalá, R. Mejía-Arauz, and B. Rogoff. 2015. "Two Cultural Paradigms of Children's Contributions in Family Work." In *Familial and Friendship Relations and Spatial Socialities: Vol. 5*, edited by S. Punch, R. M. Vanderbeck, and T. Skelton. Heidelberg, Germany: Springer.
- Cost, K. T., A. Zaidman-Zait, P. Miranda, E. Duku, L. Zwaigenbaum, I. M. Smith, W. J. Ungar, C. Kerns, T. Bennett, P. Szatmari, S. Georgiades, C. Waddell, M. Elsabbagh, and T. Vaillancourt. 2021. "'Best Things': Parents Describe Their Children with Autism Spectrum Disorder Over Time." *Journal of Autism Developmental Disorders* 51: 4560–4574.
- Cunha, F., J. J. Heckman, L. Lochner, and D. V. Masterov. 2006. "Interpreting the Evidence on Life Cycle Skill Formation." In *Handbook of the Economics of Education*, edited by E. A. Hanushek and F. Welch. Amsterdam, the Netherlands: North-Holland.
- Curcio, G., M. Ferrara, and L. De Gennaro. 2006. "Sleep Loss, Learning Capacity and Academic Performance." *Sleep Medicine Reviews* 10 (5): 323–337.
- Dewey, J. 1910. *How We Think*. D. C. Heath.
- Diamond, A. 2013. "Executive Functions." *Annual Review of Psychology* 64: 135–168.
- Fantuzzo, J., M. A. Perry, and P. McDermott. 2004. "Preschool Approaches to Learning and Their Relationship to Other Relevant Classroom Competencies for Low-Income Children." *School Psychology Quarterly* 19 (3): 212–230.
- Fantuzzo, J., E. Tighe, and S. Childs. 2000. "Family Involvement Questionnaire: A Multivariate Assessment of Family Participation in Early Childhood Education." *Journal of Educational Psychology* 92 (2): 367–376.
- Finch, J. E., and J. Obradović. 2017. "Adversity and Stress: Implications for the Development of Executive Functions." In *Executive Function: Development Across the Life Span*, edited by S. A. Wiebe and J. Karch. New York, NY: Routledge.
- Forry, N., J. Bromer, A. Chrisler, L. Rothenberg, S. Simkin, and P. Daneri. 2012. *Family–Provider Relationship Quality: Review of Conceptual and Empirical Literature of Family–Provider Relationships* (OPRE Report #2012-46). Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

- Futterer, J. N., R. J. Bulotsky-Shearer, and R. L. Gruen. 2022. "Emotional Support Moderates Associations Between Preschool Approaches to Learning and Academic Skills." *Journal of Applied Developmental Psychology* 80: 101413.
- Gathercole, S., and T. P. Alloway. 2008. *Working Memory and Learning: A Practical Guide for Teachers*. Thousand Oaks, CA: Sage.
- Georgieff, M. K., K. E. Brunette, and P. V. Tran. 2015. "Early Life Nutrition and Neural Plasticity." *Development and Psychopathology* 27 (2): 411–423.
- Gibb, R., L. Coelho, N. A. Van Rootselaar, C. Halliwell, M. MacKinnon, I. Plomp, and C. L. R. Gonzalez. 2021. "Promoting Executive Function Skills in Preschoolers Using a Play-Based Program." *Frontiers in Psychology* 12: 720225.
- Harvard University Center on the Developing Child. 2023. *A Guide to Executive Function*. <https://developingchild.harvard.edu/guide/a-guide-to-executive-function>.
- Hoyniak, C. P., J. E. Bates, M. E. McQuillan, A. D. Staples, I. T. Petersen, K. M. Rudasill, and V. J. Molfese. 2020. "Sleep Across Early Childhood: Implications for Internalizing and Externalizing Problems, Socioemotional Skills, and Cognitive and Academic Abilities in Preschool." *Journal of Child Psychology and Psychiatry* 61 (10): 1080–1091.
- Hu, B. Y., X. Fan, Z. Wu, J. LoCasale-Crouch, N. Yang, and J. Zhang. 2017. "Teacher–Child Interactions and Children’s Cognitive and Social Skills in Chinese Preschool Classrooms." *Children and Youth Services Review* 79: 78–86.
- Jeon, S., K. A. Kwon, S. Guss, and D. Horm. 2020. "Profiles of Family Engagement in Home- and Center-Based Early Head Start Programs: Associations with Child Outcomes and Parenting Skills." *Early Childhood Research Quarterly* 53: 108–123.
- Lang, S. N., S. Jeon, and E. Tebben. 2023. "Relationships Between Families and Head Start Staff: Associations with Children’s Academic Outcomes Through Home Involvement and Approaches to Learning." *Early Education and Development* 1–18.
- Li-Grining, C. P., E. Votruba-Drzal, C. Maldonado-Carreño, and K. Haas. 2010. "Children’s Early Approaches to Learning and Academic Trajectories Through Fifth Grade." *Developmental Psychology* 46 (5): 1062.
- Marvin, C. B., E. Tedeschi, and D. Shohamy. 2020. "Curiosity as the Impulse to Know: Common Behavioral and Neural Mechanisms Underlying Curiosity and Impulsivity." *Current Opinion in Behavioral Sciences* 35: 92–98.

- Mashburn, A. J., R. C. Pianta, B. K. Hamre, J. T. Downer, O. A. Barbarin, D. Bryant, M. Burchinal, D. M. Early, and C. Howes. 2008. "Measures of Classroom Quality in Prekindergarten and Children's Development of Academic, Language, and Social Skills." *Child Development* 79 (3): 732–749.
- McDermott, P. A., S. H. Rikoon, and J. W. Fantuzzo. 2014. "Tracing Children's Approaches to Learning Through Head Start, Kindergarten, and First Grade: Different Pathways to Different Outcomes." *Journal of Educational Psychology* 106 (1): 200.
- McWayne, C. M., J. W. Fantuzzo, and P. A. McDermott. 2004. "Preschool Competency in Context: An Investigation of the Unique Contribution of Child Competencies to Early Academic Success." *Developmental Psychology* 40: 633–645.
- Moffitt, T. E., L. Arseneault, D. Belsky, N. Dickson, R. J. Hancox, H. Harrington, R. Houts, R. Poulton, B. W. Roberts, S. Ross, M. R. Sears, W. M. Thomson, and A. Caspi. 2011. "A Gradient of Childhood Self-Control Predicts Health, Wealth, and Public Safety." *Proceedings of the National Academy of Sciences* 108 (7): 2693–2698.
- Mokrova, I. L., M. O'Brien, S. D. Calkins, E. M. Leerkes, and S. Marcovitch. 2013. "The Role of Persistence at Preschool Age in Academic Skills at Kindergarten." *European Journal of Psychology of Education* 28: 1495–1503.
- National Institute of Mental Health. 2023. Attention-Deficit/Hyperactivity Disorder. National Institutes of Health, U.S. Department of Health and Human Services. <https://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd>.
- Paradise, R., and B. Rogoff. 2009. "Side by Side: Learning by Observing and Pitching In." *Ethos* 37 (1): 102–138.
- Parker, R., B. S. Thomsen, and A. Berry. 2022. "Learning Through Play at School – A Framework for Policy and Practice." *Frontiers in Education* 7: 751801.
- Prado, E. L., K. G. Dewey. 2014. "Nutrition and Brain Development in Early Life." *Nutrition Reviews* 72 (4): 267–284.
- Rimm-Kaufman, S. E., K. M. La Paro, J. T. Downer, and R. C. Pianta. 2005. "The Contribution of Classroom Setting and Quality of Instruction to Children's Behavior in Kindergarten Classrooms." *The Elementary School Journal* 105 (4): 377–394.
- Shankar, P., R. Chung, and D. A. Frank. 2017. "Association of Food Insecurity with Children's Behavioral, Emotional, and Academic Outcomes: A Systematic Review." *Journal of Developmental & Behavioral Pediatrics* 38 (2): 135–150.

- Silvia, P. J. 2008. "Interest—The Curious Emotion." *Current Directions in Psychological Science* 17 (1): 57–60.
- Singh, L., Y. Moh, X. Ding, K. Lee, and P. C. Quinn. 2021. "Cognitive Flexibility and Parental Education Differentially Predict Implicit and Explicit Racial Biases in Bilingual Children." *Journal of Experimental Child Psychology* 204: 105059.
- Singh, L., P. C. Quinn, M. Qian, and K. Lee. 2020. "Bilingualism Is Associated with Less Racial Bias in Preschool Children." *Developmental Psychology* 56 (5): 888.
- Sinnema, C., A. Sewell, and A. Milligan. 2011. "Evidence-Informed Collaborative Inquiry for Improving Teaching and Learning." *Asia-Pacific Journal of Teacher Education* 39 (3): 247–261.
- Sung, J., and K. A. Wickrama. 2018. "Longitudinal Relationship Between Early Academic Achievement and Executive Function: Mediating Role of Approaches to Learning." *Contemporary Educational Psychology* 54: 171–183.
- Tang, X., K. A. Renninger, S. E. Hidi, K. Murayama, J. Lavonen, and K. Salmela-Aro. 2022. "The Differences and Similarities Between Curiosity and Interest: Meta-Analysis and Network Analyses." *Learning and Instruction* 80: 101628.
- Teicher, M. H., J. A. Samson, C. M. Anderson, and K. Ohashi. 2016. "The Effects of Childhood Maltreatment on Brain Structure, Function and Connectivity." *Nature Reviews Neuroscience* 17: 652–666.
- Turnbull, K. L., D. M. C. Mateus, J. LoCasale-Crouch, F. L. Coolman, S. E. Hirt, and E. Okezie. 2022. "Family Routines and Practices That Support the School Readiness of Young Children Living in Poverty." *Early Childhood Research Quarterly* 58: 1–13.
- Warner, G. J., J. N. Lensing, and D. Fay. 2017. "Personal Initiative: Developmental Predictors and Positive Outcomes from Childhood to Early Adolescence." *Journal of Applied Developmental Psychology* 52: 114–125.
- Whitebread, D., M. Basilio, M. Kvalja, and M. Verma. 2012. *The Importance of Play*. Brussels, Belgium: Toy Industries of Europe.
- Wright, B. L., and S. L. Counsell. 2018. *The Brilliance of Black Boys: Cultivating School Success in the Early Grades*. New York, NY: Teachers College Press.

- Yogman, M., A. Garner, J. Hutchinson, K. Hirsh-Pasek, R. M. Golinkoff, Committee on Psychosocial Aspects of Child and Family Health, Council on Communications Media, R. Baum, T. Gombau, A. Lavin, G. Mattson, L. Wissow, D. L. Hill, N. Ameenuddin, Y. R. Chassiakos, C. Cross, R. Boyd, R. Mendelson, M. A. Moreno, J. Radesky, W. S. Swanson, J. Hutchinson, and J. Smith. 2018. "The Power of Play: A Pediatric Role in Enhancing Development in Young Children." *Pediatrics* 142 (3): 1–17.
- Zelazo, P. D. 2020. "Executive Function and Psychopathology: A Neurodevelopmental Perspective." *Annual Review of Clinical Psychology* 16: 431–454.
- Zelazo, P. D., C. B. Blair, and M. T. Willoughby. 2016. *Executive Function: Implications for Education*. NCER 2017-2000. Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education.
- Zelazo, P. D., and S. M. Carlson. 2020. "The Neurodevelopment of Executive Function Skills: Implications for Academic Achievement Gaps." *Psychology & Neuroscience* 13 (3): 273–298.
- Zelazo, P. D., and S. M. Carlson. 2022. "Reconciling the Context-Dependency and Domain-Generality of Executive Function Skills from a Developmental Systems Perspective." *Journal of Cognition and Development* 24 (2): 1–19.
- Zosh, J. M., K. Hirsh-Pasek, E. J. Hopkins, H. Jensen, C. Liu, D. Neale, S. L. Solis, and D. Whitebread. 2018. "Accessing the Inaccessible: Redefining Play as a Spectrum." *Frontiers in Psychology* 9: 1124.