California Preschool/Transitional Kindergarten

Learning Foundations Introduction





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A Message from the State Superintendent of Public Instruction



I am proud to present the California Preschool/Transitional Kindergarten Learning Foundations (PTKLF), which detail the developmental milestones of children age three to fiveand-a-half participating in center-based preschool, homebased preschool, and transitional kindergarten settings. With the expansion of Universal Prekindergarten (UPK) in the state, this resource reinforces the UPK initiative by establishing clear learning goals for young children regardless of the UPK program they participate in—so that each child has the opportunity for a strong start prior to kindergarten.

This new iteration of the PTKLF builds upon the California Preschool Learning Foundations (volumes 1-3, 2008-2012) by incorporating the most recent research on child development, such as more robust inclusion of the science of learning and literacy development, which aligns with my initiative to ensure all students learn to read by third grade.

California is also the first state to adopt a significant emphasis on diversity, equity, and inclusion in preschool learning expectations. The Language and Literacy Development domain has been restructured to include not only the development of English but the unique development of any language or dialect. This approach celebrates the strengths of multilingualism—a core value in education in California. Throughout the Language and Literacy Development domain, you will see individual examples of child speech which mirror California's myriad home languages, including Spanish, Mandarin, Cantonese, Vietnamese, American Sign Language, and more. In all domains, you will see references to multilingual learners' home languages.

There are also several examples of skills demonstrated by children with disabilities, which aligns with our commitment that all UPK programs foster a sense of belonging and inclusivity and every child receives joyful and enriching learning opportunities. Furthermore, this new iteration of the PTKLF highlights and affirms California's rich diversity of cultures, experiences, and racial-ethnic identities, such as the Latino and Asian communities, Native Nations and tribal communities, and Black/African American communities.

I am pleased with the significant contribution of diverse educators, interest holders, and child development experts across the state who provided input on these revisions. The PTKLF are an incredible resource for UPK programs, and I hope district leaders, site supervisors, program directors, family child care providers, and preschool and transitional kindergarten teachers apply the PTKLF in a way that celebrates the unique and diverse population of California's young children and ensures joyful and playful learning opportunities.

Sincerely,

Tony Thurmond

Tony Thurmond

State Superintendent of Public Instruction

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The development of the Preschool/Transitional Kindergarten (TK) Learning Foundations involved many people. The following groups contributed: (1) project leaders; (2) lead writers; (3) domain subject matter experts; (4) diversity, equity, and inclusion expert reviewers and contributors; (5) staff from the California Department of Education (CDE); (6) CDE's Universal PreKindergarten Research Design Team; (7) the State Board of Education; (8) early childhood interested parties and constituencies; (9) educator focus groups; and (10) WestEd project staff.

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California Collaborative for Educational Excellence

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California Dyslexia Initiative

California Education Partners

California Family Child Care Network

California Kindergarten Association

California Preschool Instructional Network

California School Boards Association

California Special Education Local Plan Area Association

California Teachers Association

Californians Together

Child Care Resource Center

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Introduction to the Preschool/Transitional **Kindergarten Learning Foundations**

The California Preschool/Transitional Kindergarten Learning Foundations (PTKLF) describe knowledge and skills that most children age three to five and a half typically develop in high-quality, equitable, and responsive early education programs, including Transitional Kindergarten (TK), the California State Preschool Program (CSPP), and other federal and publicly funded and private preschool programs. The foundations are designed to recognize that the early education years are a time of major physical, cognitive, language, and social-emotional growth. Young children are curious and eager to explore and make sense of their world. Through child-led play, exploration, and interaction with adults and peers at home and in the early education environment, children develop skills that set the foundation for success in school and life. During this period, children engage in more conversations and shared activities with others, form relationships with peers, and learn to regulate emotions and behaviors with less adult support. They continue to expand their language skills in their home languages, English or other languages, and develop foundational skills in early literacy, math, and science.

Grounded in the most recent science of learning and development, the PTKLF describe key competencies children develop in nine domains of learning: (1) Approaches to Learning, (2) Social and Emotional Development, (3) Language and Literacy (including Foundational Language Development and English Language Development), (4) Mathematics, (5) Science, (6) Physical Development, (7) Health, (8) History-Social Science, and (9) Visual and Performing Arts. The foundations reflect attention to the whole child, focusing on all aspects of learning and development, including children's social-emotional and physical development, while also addressing children's development in areas that map more

The Preschool/Transitional Kindergarten Learning Foundations are the California early learning standards for children in early education programs. Why call them foundations? The term "foundation" is used rather than "standard" to convey that learning in every domain sets the foundation for school readiness and later life success.

directly to academic subjects such as mathematics, language and literacy, and science. However, it is important to keep in mind that learning is an integrated experience, and development in

one domain affects development in other domains. So, although the foundations are organized to represent discrete skills, learning occurs simultaneously across domains within joyful and meaningful educational experiences. High-quality early education programs provide interactions, instruction, and environments that research has shown to promote this integrated early learning and development.

The PTKLF provide guidance to all California early education programs, including TK, federal and state preschool programs (for example, CSPP, Head Start), private preschool, and family child care homes, that offer an early education experience.

Early education program refers to an environment that provides an education component or curriculum that nurtures the learning and development of the whole child, including all domains covered in the PTKLF. The term is inclusive of TK, federal and state preschool programs (for example, CSPP, Head Start), private preschool, and family child care homes that offer an early education experience.

Overall, the PTKLF:

- Provide teachers, families, and the public with a clear understanding of the wide range of knowledge and skills that children age three to five and a half typically attain when attending a high-quality early education program, with the understanding that children develop these competencies at different times and in different ways.
- Describe the knowledge and skills that serve as the foundation for long-range learning and academic achievement in kindergarten through grade twelve. The PTKLF describe expectations across nine domains in early learning and development in a similar way that the content standards in K-12 define the knowledge, concepts, and skills that students should acquire in various content areas at each grade level.

Children's Development Is Shaped by Culture, Racial-Ethnic Backgrounds, **Language, and Life Experiences**

Demographics of Children in California

California has an extraordinarily diverse population of children. Among the 2.5 million children from birth to age five living in California in 2022, 51 percent were Hispanic, 23 percent were White, 12 percent were Asian, 5 percent were Black, and 0.2 percent were Native American/American Indian.² In addition, nearly 60 percent of children age birth to five speak a language other than English at home,³ and nearly 94,000 children age birth to five were identified with a disability in 2021–22.4

Young children's development is shaped by their varied experiences, cultures, racialethnic backgrounds, languages, individual strengths, and diverse needs. For example, the languages children speak at home support children's development in other domains, as language is foundational to all learning. Children's home language development also supports their English language development, as strong foundations in one language transfer to learning other languages. Research also suggests that children's cultural values and home practices can influence the development of their approaches to learning skills, including their initiative and how they demonstrate curiosity.⁵ Similarly, children with disabilities, such as autism, sensory sensitivity, and attentional and impulse control difficulties,

may express their emotions and engage in social interactions differently than their peers who are typically developing. It is critical that early education programs create learning environments in which diversity is honored and supported while the families and adults important in children's lives feel welcome to engage in their child's educational experience. Such an environment strengthens children's sense of belonging and joy of learning.

Creating safe and welcoming spaces for children and their families also includes understanding potential sources of stress and trauma that may impact their development and implementing healing practices that act as a buffer against the potential negative effects of adverse experiences. Sources of stress or trauma can include, but are not limited to, poverty, food and housing insecurity, domestic violence, gender-based violence, neglect, racism, immigration, and forced migration, as well as family separations, death or illness of a parent or family member, and other impactful life events. Furthermore, historical trauma that results from systemic oppression has impacted communities, families, and their children for generations. ⁶ The experiences of African American/Black children and their families in early education programs are impacted by the

history of racism in our nation, which has created an opportunity gap and disproportionate rates of discipline, expulsion, and suspension. Native nations and tribal communities have historically been impacted by state and federal family separation policies and practices in which children were removed from their homes. Similarly, immigration enforcement policies that lead to forced family separations have impacted the health, sense of security, and overall well-being of children from Latino immigrant communities.8 Children whose families have been forced to resettle in the United States as a result of violence and unrest in their home countries and continents, such as immigrants or refugees from the Middle East/North Africa, Eastern Europe, Central America, and Southeast Asia, experience many threats to their well-being, including poverty, malnutrition, emotional vulnerability, and personal and family mental health conditions. These experiences cause intergenerational trauma as a result of the disruption of families and communities. Warm, caring, and responsive interactions with adults and peers are essential for the well-being and healthy development of children who have experienced adversity and trauma. Supportive environments where children feel emotionally and physically safe and secure help children cope with stress and build resilience.

Promoting Diversity, Equity, and Inclusion

Promoting equity for young children means "ensuring that all children can achieve their individual full potential as engaged learners and valued members of society."10 Embracing a strengthsbased approach, the PTKLF represent and honor diversity in children's cultures, languages, and life experiences; support the continued growth of children's home languages; and share examples of culturally and linguistically responsive practice. The PTKLF acknowledge children's diverse strengths, needs, vulnerabilities, and ways of knowing and communicating to ensure full participation and a sense of belonging for all children and families within early education programs. Overall, these learning foundations provide the groundwork for establishing equitable early education programs in which individual children are recognized, valued, and supported.

Linguistically diverse populations, Native nations and tribal communities, and people with disabilities have experienced the effects of structural racism and bias, which can impact children's learning, development, and well-being. Children's experiences in the world are shaped by the intersectionality, or interconnection, of different aspects of their identities and experiences. While the foundations represent the learning of children of diverse racial-ethnic and cultural backgrounds, home languages, and different abilities, these aspects of identity work together. Supportive environments with strong positive relationships and rich learning experiences can help address the effects of stress or trauma and support children's resilience and well-being. When working with young children, teachers should consider how different aspects of children's identities impact their learning and development and how they can use trauma- and healing-informed practices to support children's well-being.

Guiding Principles

Children learn best in the context of supportive, affirming, and nurturing relationships and environments that make them feel emotionally and physically safe and experience security and a sense of belonging. Supportive, responsive, and consistent relationships with adults provide children with a secure base where they feel confident to explore, engage



with others, and seek support when needed. In emotionally safe and secure relationships, children have opportunities to explore and follow their interests, learn how to engage and communicate effectively, express their emotions, and build positive relationships with adults and other children.

Every child is unique and has diverse strengths rooted in their families' and communities' cultures, languages, practices, and experiences. Children come from a wide variety of racialethnic, cultural, and linguistic backgrounds and life experiences. Through offering responsive and inclusive learning environments, early education programs value, respect, and build on the unique backgrounds and prior experiences of each child. Through experiences in their homes and communities, children gain knowledge and beliefs that help shape how they experience, understand, and interpret the world. Learning opportunities that build on children's cultural, racial-ethnic, and linguistic experiences at home and in their communities bridge the home and early education environments and strengthen children's sense of identity and belonging.

- Children's home languages are an asset and establish a strong foundation for learning and development across domains. Multilingualism is a strength, with broad benefits that include linguistic, social, and cognitive growth. Nurturing the home language builds connections with family and community, supports children's social and identity development, and sets a foundation for academic success. Equitable early childhood practices support multilingualism as a long-term goal and an integral part of children's early learning environments. 11
- Family and community partnerships create meaningful connections and support children's sense of belonging. Meaningful collaborations with families are built on respectful, reciprocal, trusting relationships in which families and teachers share responsibility for the well-being and education of children. Teachers and early education programs engage families through culturally and linguistically affirming interactions, with a desire to learn with and from families about their goals, values, and aspirations. Reciprocal relationships between teachers and families build meaningful two-way collaboration and home—school connections that support children's learning and sense of belonging as well as their families' sense of belonging.
- Children's learning and development are integrated across domains. While the PTKLF are organized in distinct domains of learning and development, the learning of any skill or concept does not occur in isolation. Children develop skills and concepts across domains within meaningful, rich learning experiences. Furthermore, the skills or abilities children learn in one domain support the learning and development of skills in other domains. For example, children's growing understanding and use of language helps them learn about new ideas and concepts, express their emotions, solve problems, and connect with others.
- Children demonstrate varying strengths and needs in their development and learning across domains. Each child is unique and develops in their own way and at their own pace. Some children may exhibit competencies that go beyond the level described in a particular foundation, while others may need more time to reach that level. As children develop, they may show more advanced competencies in one domain than in another. How children go about learning also varies from child to child. A child's individual learning path is influenced by many factors, including their temperament; racial-ethnic, cultural, and linguistic experiences; living conditions; personal strengths, interests, abilities, and dispositions; and whether they experience, or have experienced, toxic stress or trauma. Effective teaching practices build on individual children's unique strengths and offer learning experiences that are meaningful and adapted to support children's diverse strengths, interests, and needs.

Children have different ways of knowing and may express their knowledge and skills across domains through different means and modalities. Children may demonstrate their ideas, knowledge, and understanding through a variety of modalities and ways of communicating, both verbally and nonverbally. Multilingual learners use their home languages, English, or a combination of all the languages they are learning to express themselves and make meaning. Children may communicate ideas and express their understanding, for example, through drawing, modeling, movement, and role-play. Children with disabilities may



use different communication modalities such as sign language, nonverbal gestures, a picture exchange system, or an electronic assistive technology communication device.

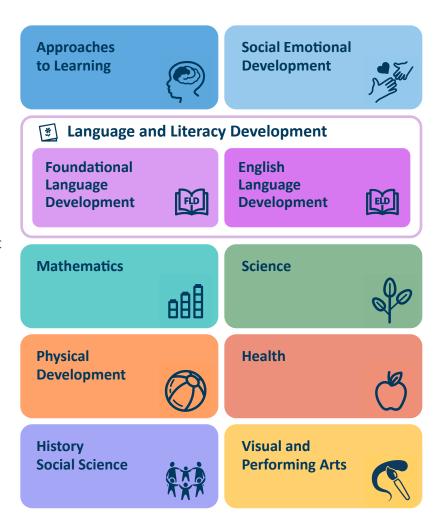
- Play is a primary context for learning and creating joyful learning spaces. Play offers joyful opportunities for learning and development across domains. 12 Play experiences provide a powerful context for social interactions, creativity, self-expression, thinking, problem-solving, and inquiry-based learning. Playful learning experiences, from free play to guided play, facilitate children's engagement and maximize their attentiveness and self-regulation. Through providing high-quality early learning environments, early education programs value play and offer children a balance of child-led and teacher-guided play activities to promote children's interest and engagement in their learning.
- Intentional teaching enhances children's development through planned learning experiences designed to support individual children Teachers intentionally use their knowledge of individual children's development, interests, and racial-ethnic, cultural, and linguistic backgrounds to design diverse learning environments that allow for children's meaningful explorations and playful learning. Teachers are intentional in their efforts to support children's learning in areas identified by the PTKLF through child-directed learning and teacher-facilitated learning experiences. They are flexible in accommodating differences in children's learning strengths, interests, and needs.

Organization of the Preschool/Transitional **Kindergarten Learning Foundations**

Domains and Sub-Domains

The PTKLF describe the learning and development of children from age three through five and a half years of age in nine domains, with one domain comprising two subdomains:

- 1. Approaches to Learning
- 2. Social and Emotional Development
- 3. Language and Literacy
 - Foundational Language Development
 - English Language Development
- 4. Mathematics
- 5. Science
- 6. Physical Development
- 7. Health
- 8. History—Social Science
- 9. Visual and Performing Arts









Language and Literacy Development – A Novel Structure

The Language and Literacy Development domain consists of two complementary sub-domains: Foundational Language

Development and English Language Development. The Foundational Language Development sub-domain is intended for use with all children. It describes language and literacy development in any language, including English, elevating the home language as a linguistic asset that multilingual learners bring to early education programs. The English Language Development subdomain is intended for use with children who are learning English as an additional language in early education programs.

Strands and Sub-Strands

Each domain is organized by strands and sub-strands that represent major learning and development areas within the domain.

Foundation Statements

Within each sub-strand are individual foundation statements that describe the competencies the knowledge 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 their unique developmental journey. 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" covers skills and knowledge that children often demonstrate between three and four-and-a-half years of age.
- A "Later Foundation" covers skills and knowledge that children often demonstrate between four and five-and-a-half years of age.

Extending the later stage to age five and a half emphasizes how the PTKLF is inclusive of the chronological age of most children in TK. In the English Language Development sub-domain, the three levels—Discovering, Developing, and Broadening—are based on children's understanding and use of English rather than on their age.

The overlap between the "Early" and "Later" stages highlights learning and development as a continuum rather than as tied to discrete age-related expectations. This overlap is intentional and more accurately reflects individual variation in children's development as opposed to focusing on narrowly defined ages. It is important to note that while variation in development is expected based on children's individual developmental journey, if concerns arise about a child's development, teachers can partner with families to conduct developmental screenings that can

help them decide whether to refer the child for comprehensive developmental assessment and possibly additional supports and specialized services.

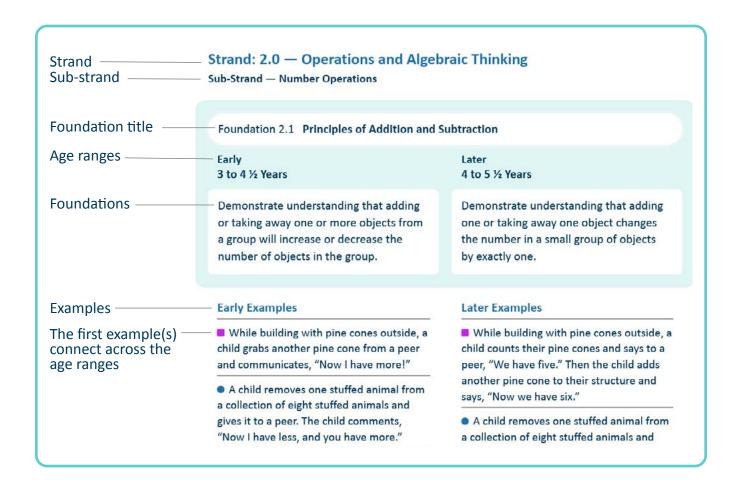
Examples

There are many diverse ways in which children may demonstrate the skill or concept described in a foundation statement. For each level of any given foundation, at least three examples illustrate the different ways children may demonstrate their knowledge and skills. Some examples also include how the teacher may support ongoing development as children progress to the next level. 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 are intended to help teachers gauge where a child's development is and consider how to support their learning within their current skill level as well as build toward the next skill level in that foundation. As teachers review the examples, they should consider the following:

- Each example captures a moment in time, illustrating how children demonstrate the skill or understanding described in the foundation within a supportive early learning environment.
- The first one or two examples in each foundation are aligned across the Early and Later age levels. In English Language Development, the first example is aligned across the three developmental levels: Discovering, Developing, and Broadening. This approach illustrates more explicitly how children's skill or knowledge develops over time.
- Examples show how children may demonstrate a developing skill or knowledge as part of their everyday routines, learning experiences, and interactions with adults and peers.
- Examples are written to reflect diversity in how children demonstrate their abilities and how children may communicate their knowledge in a range of verbal and nonverbal ways. The examples also represent children from diverse cultural and linguistic backgrounds.
- Examples provide diverse 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.

The examples for a given foundation are just a few of the many ways in which children may demonstrate a skill or knowledge. Furthermore, while the examples may provide teachers with valuable ideas for how to support children's learning and development as children build their skills or knowledge, the examples are only a small subset of all the different strategies teachers may

employ to gauge and support children's learning and development in any given area. Teachers will benefit from professional development and coaching, the use of curriculum, child observational assessments, structured prompts, direct assessments, and other complementary resources and tools to guide their practice as they support children's learning and development across domains.



Interrelatedness of Domains

While the PTKLF are organized as separate domains, children's learning and development is integrated and takes place across domains. Children draw from their skills and knowledge in one domain to engage in learning the skills and knowledge in other domains. Children use all their senses and competencies as they learn new things and relate new experiences to prior ones. For example, healthy habits of nutrition, sleep, hygiene, and physical activity help children stay physically and mentally healthy and support intellectual, physical, and social growth. In turn, children's physical development supports their play and social and emotional, cognitive, and

language development. Teachers should be alert to the developmental assets students bring to each learning experience and draw on them to support other areas of development.

Approaches to learning skills, such as the ways in which children express curiosity and interest or engage in problem-solving, are foundational to learning in all domains.13 Furthermore, children's developing executive functions contribute to their academic outcomes in math,14 language and literacy,15 science,16 and social and emotional development.¹⁷ During playful learning experiences, like building a block castle together, children use their approaches to learning and science skills to plan,



try, and adjust their design and building solutions; they engage in collaborative problem-solving, which involves their social and emotional skills to negotiate and resolve conflicts; and they make decisions collaboratively and express agreement and disagreement respectfully as members of their classroom community.

Similarly, during a book read-aloud, children use their understanding of language, emotional awareness, ability to focus and engage actively, and full range of experiences at home and in their communities to make new connections and meaning. Understanding and communicating through language is a crucial element of learning in any domain. Children draw on their understanding and use of language to interact and connect with others, learn about new ideas and concepts, express emotions, and solve problems. 18 As children participate in different learning activities related to literacy, mathematics, science, or other areas, they acquire new vocabulary and develop their conversational skills. For example, as they explore concepts in science or discuss new topics related to history—social science, they naturally find new situations in which to ask questions and provide explanations.

Science learning fosters a joy of discovery and an overall positive approach to learning. Making discoveries, identifying solutions, and implementing ideas develops children's initiative in learning and helps them become self-confident learners. 19 Early science experiences provide authentic situations for learning and using language and literacy skills.²⁰ Furthermore, many of the skills in mathematics are closely related to practices in science. For example, mathematics skills such as the ability to notice patterns and structures, collect or interpret data, compare size or quantity, and sort and classify objects are integral to the scientific process when children carry out investigations and document and interpret their observations.

Participation in visual and performing arts supports growth in language, cognition, social and emotional skills, and physical abilities. Visual and performing arts also provide children with an alternative to verbal communication to express and communicate their observations, descriptions, and explanations. As a child sings their favorite songs in their home language, participates in a dance from their cultural community, or engages in dramatic play that connects to their interests, the child can strengthen their physical development; practice their language and literacy skills; practice self-regulation and engage their executive function skills; and experience social connection, joy, and a sense of belonging.²¹

When early education experiences build on what children know and invite them to use their skills and knowledge playfully across domains, they thrive in their learning and development. Children build connections across content areas and practice their skills in authentic ways that set a foundation for academic success and well-being.

How the Preschool/Transitional Kindergarten Learning Foundations Promote Diversity, Equity, Inclusion, and Belonging

The PTKLF and accompanying examples highlight the ways in which children's experiences with diverse cultural practices, languages, forms of communication, and abilities strengthen their learning and development. In particular, the PTKLF help illustrate the learning and development of children from diverse racial-ethnic and cultural backgrounds, multilingual learners, children with disabilities, and children from Native nations and tribal communities.

Although great care has been given to represent children's backgrounds and experiences in the foundations, it is impossible to adequately represent all cultures, languages, and varied abilities given the rich diversity of young children in California. Children's individual experiences are shaped by many distinctive factors, including their culture, linguistic background, and personal characteristics. The foundations provide a guide that teachers and early education programs can use to inform how they engage with the unique children, families, and communities they serve.

Teachers and programs can work to build a shared understanding through reciprocal relationships with families to create culturally responsive and affirming early learning opportunities for children.

A Development Process That Promotes Equity, Diversity, and Inclusion

The development of the PTKLF was informed by domain-specific subject matter experts, including those with expertise in equity and inclusion of diverse children in early learning. Experts were involved as writers, contributors, and special reviewers with a focus on equity and diversity, multilingual learners, and the inclusion of children with disabilities. This process also engaged members of Native nations and tribal communities to promote and represent tribal cultures and languages. Key constituencies that represent the diversity of children and families in California provided feedback on working drafts in focus groups and contributed to the development of examples that elevate children's home languages and culturally specific practices.

Cultural and Linguistic Diversity

The foundations highlight the ways in which children's cultural and racial-ethnic experiences can inform how children learn and develop and how learning opportunities can build on children's prior knowledge. Examples throughout the domains reflect multiple racial-ethnic backgrounds, cultures, and languages to honor and celebrate diversity in how children might demonstrate their developing skills and knowledge. Many examples name specific cultural practices and experiences that children draw on to make meaning of what they are learning and demonstrate their growing skills and development. Examples were also written to reflect the diversity of Native nations and tribal communities in California and illuminate unique aspects of cultural practices from specific Native nations and tribal communities.

Young children from birth to five and a half develop and learn foundational language skills and knowledge in the language varieties of their homes, communities, and early education programs. From a developmental lens, all the language varieties that children bring to the early education program should be leveraged as linguistic assets. This includes providing enhancements to instructional practices that support children's learning of English for both social and academic uses. These language and literacy experiences provide a strong basis as children advance through elementary school grades and acquire more academic English in spoken and written language.²² Overall, children should have the opportunity to learn social and academic uses of English in the

context of culturally affirming teaching practices that value the language varieties they learn at home and in their communities.

Multilingual Learners

"Multilingual learner" refers to a child who is acquiring two or more languages at the same time or a child who is learning English while continuing to develop their home language. Research demonstrates that multilingualism is an asset that affords children linguistic, social, and developmental strengths and serves as a foundation for lifelong learning.²³ The PTKLF elevate children's home languages in ways that represent the diversity of young children in California. Varied examples represent children

A multilingual learner is a child learning two or more languages at the same time or a child who is learning English while continuing to develop their home language. The term "multilingual learner" can overlap or be inclusive of other frequently used terms, such as English learner (EL) or dual language learner (DLL).

speaking entirely in their home languages as well as code-switching²⁴ that highlight the power of translanguaging²⁵ in children's leveraging of multilingual capacities as resources for learning. In addition, both Language and Literacy sub-domains of the foundations include examples in the orthography of the following home languages of multilingual learners: Spanish, Cantonese, Mandarin, Vietnamese, Arabic, Armenian, Punjabi, Russian, Ukrainian, Farsi, Korean, Hmong, and Tagalog.

Multilingual learners possess foundational language abilities that they have developed in the context of their relationships in their homes and communities. The use of the 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, there are various strategies to encourage multilingual learners to use their home languages, inviting them to leverage all 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 multilingualism and how the home language serves as a critical foundation for English language development. Teachers should also encourage families to promote their child's continued development of the home language as an asset to overall learning and a positive sense of self.

Children with Disabilities

Every child brings a unique perspective into the classroom, a testament to the beautiful diversity of how children take in and process information and experiences and express their learning. Each learner, including those with diverse learning abilities or distinct educational needs, enriches our understanding of human potential. Teachers have the incredible responsibility and opportunity to nurture this variety of learning styles, ensuring a supportive and inclusive environment that



values and encourages each child's unique approach to knowledge and growth. The foundations are written to illustrate inclusive learning opportunities for all children, acknowledging that each child is unique and may require different approaches to demonstrate their development. In certain situations, some children may have diverse abilities that could benefit from alternate methods for demonstrating their development.

To promote inclusivity, the foundations incorporate Universal Design for Learning, recognizing and accommodating the unique ways in which children may demonstrate their growth, regardless of their abilities. The terms communicates, responds, shares, and expresses are used often in addition to the term says, respecting the diversity of communication styles and ensuring inclusivity of any language and any form of communication, including speaking, sign language, finger spelling, pictures, electronic communication devices, gesturing, eye gaze, and so forth. The terms identifies

and indicates or points to are used to represent multiple ways of indicating objects, people, or events in the environment. Actions, such as drawing, modeling with different materials, role-play, and movement are used to describe how children might demonstrate their understanding and skills in ways other than verbal language (refer to figure 1). This inclusive approach ensures every child's unique manner of engagement and learning is used and celebrated.

Examples are also written in language that affirms every child's identity and includes both personfirst language (for example, a child with autism) and identity-first language (for example, a Deaf child) to highlight how children's identities are represented in the foundations. Recognizing that each child's needs and capabilities are unique, children with disabilities may need additional support, accommodations, and modifications to demonstrate skills detailed in the foundations, such as environmental adaptations (for example, limiting background noise and other distractions or using seating that is flexible), adaptations to materials (for example, using a pencil grip or using visual cues), and instructional adaptations (for example, modeling or prompting). Teachers and early education programs should consult and collaborate with the Individualized Family Service Plan (IFSP) or Individualized Education Program (IEP) team, including speech-language pathologists, occupational therapists, physical therapists, vision specialists, and special educators, to learn about and implement accommodations and modifications as directed by the student's IEP.

Figure 1. Communicating Knowledge and Skills in a Variety of Ways

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

Every foundation is accompanied by examples demonstrating a few ways that a child might demonstrate their knowledge. Consider the many ways that a child might exhibit their knowledge about a spider's habitat.

Using different home languages:

English: A child draws a spider in its web and explains, "The spider made a web to catch food."

Spanish: A child draws a spider in its web and explains in Spanish, "La araña hizo una telaraña para atrapar comida" (The spider made a web to catch food).

Mandarin: A child draws a spider in its web and explains in Mandarin, "这只蜘蛛结了 一张网捕虫" (The spider has made a web to catch food).

Cantonese: A child draws a spider in its web and explains in Cantonese, "呢隻蜘蛛結咗 一張網捕蟲" (The spider has made a web to catch food).

American Sign Language: A child draws a spider in its web and explains in American Sign Language, "The spider made a web to catch food."

A mix of English and Spanish: A child draws a spider in its web and explains in Spanish and English, "La araña made a telaraña to

catch food" (The spider made a web to catch food).

Using nonverbal communication:

An augmentative and alternative communication (AAC) device: A child points to a picture of a spiderweb in a book. Then the child points to "bug" and "eat" on their communication board and gestures at the web, indicating that the spider will eat a bug in the web.

Drawing: A child draws a spiderweb with a fly trapped in the web. The child makes an "eating" motion by opening and closing their hand, moving their hand toward the paper with their drawing.

Embodied through play: After experiencing a book about spiders, a child uses natural materials to create a web and toy insects to show how a spider uses their web to catch food.

Using the California Preschool/Transitional Kindergarten Learning Foundations

The learning expectations outlined in the PTKLF provide a backbone for aligning multiple dimensions of practice, including curriculum, instructional practices, assessment, and educator professional development. For California early education programs, the PTKLF define the knowledge, concepts, and skills most children learn as they become ready to transition from early education programs to kindergarten, given their experiences at home, in early education programs, and in their communities. The PTKLF can be used by early childhood leaders and educators in California to:

- set learning goals for children;
- guide developmentally appropriate, equitable, inclusive practice, including planning learning environments, experiences, and strategies for teaching to promote children's learning across domains;
- select and implement curricula aligned with the PTKLF;
- design and use assessments aligned with the PTKLF;
- design professional development and coaching programs for educators to support understanding and effective use of the learning foundations across domains;
- enhance preschool through third grade (P-3) continuity; and
- inform programs' planning and ongoing quality improvement.

Endnotes

- Linda Darling-Hammond et al., "Implications for Educational Practice of the Science of Learning 1 and Development," Applied Developmental Science 24, no. 2 (2020): 97-140; David Osher et al., "Drivers of Human Development: How Relationships and Context Shape Learning and Development," Applied Developmental Science 24, no. 1 (2020): 6–36; Science of Learning and Development Alliance, How the Science of Learning and Development Can Transform Education: Initial Findings (Science of Learning and Development Alliance, 2020), 1–15.
- United States Census Bureau, 2022, "American Community Survey Data," https://www.census.gov/ 2 programs-surveys/acs/data.html.
- Ivana Tú Nhi Giang and Maki Park, California's Dual Language Learners: Key Characteristics and 3 Considerations for Early Childhood Programs (Washington, DC: Migration Policy Institute, 2022), 1-7.
- "IDEA Part B Child Count and Educational Environments," U.S. Department of Education, IDEA 4 Section 618 Data Products: Static Tables, 2021–22, accessed July 6, 2023, https://data.ed.gov/ dataset/idea-section-618-data-products-static-tables-part-b-count-environ-table1/resources; "Part C Child Count and Settings," U.S. Department of Education, IDEA Section 618 Data Products: Static Tables, 2021–22, accessed July 6, 2023, https://data.ed.gov/dataset/idea-section-618-dataproducts-static-tables-part-c-child-count-and-settings-table-1/resources.
- 5 Andres S. Bustamante and Annemarie 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 (2020): 124-137.
- Administration for Children and Families, 2023, "What is Historical Trauma?" https://www.acf.hhs. 6 gov/trauma-toolkit/trauma-concept.
- 7 Shantel Meek et al., Start with Equity: California, (Children's Equity Project, 2020).
- 8 Megan Finno-Velasquez et al., "Heightened Immigration Enforcement and the Well-Being of Young Children in Immigrant Families: Early Childhood Program Responses," Zero to Three Journal: Family Separation and Parental Loss in Early Childhood 39, no. 1 (2018): 27–32.
- John S. Murray, "War and Conflict: Addressing the Psychosocial Needs of Child Refugees," Journal of Early Childhood Teacher Education 40, no. 1 (2019): 3-18; Rebecca J. Scharf, Christie Zheng, Christina Briscoe Abath, Susanne P. Martin-Herz, "Developmental Concerns in Children Coming to the United States as Refugees," Pediatrics 147, no. 6 (2021): e2020030130.

- 10 National Association for the Education of Young Children, Advancing Equity and Diversity in Early Childhood Education: A Position Statement of the National Association for the Education of Young Children (Washington, DC: National Association for the Education of Young Children, 2018), 4.
- 11 National Council of Teachers of English, Equity and Early Childhood Education: Reclaiming the Child (National Council of Teachers of English, 2016), 1-5, https://cdn.ncte.org/nctefiles/ equityearlyedbrief.pdf.
- 12 Michael Yogman et al., "The Power of Play: A Pediatric Role in Enhancing Development in Young Children," Pediatrics 142, no. 3 (2018); Jennifer M. Zosh et al., "Accessing the Inaccessible: Redefining Play as a Spectrum," Frontiers in Psychology 9 (2018): 1124.
- 13 Matthias J. Gruber, Bernard D. Gelman, and Charan Ranganath, "States of Curiosity Modulate Hippocampus-Dependent Learning Via the Dopaminergic Circuit," Neuron 84, no. 2 (2014): 486-496.
- 14 Caron A. C. Clark, Verena E. Pritchard, and Lianne J. Woodward, "Preschool Executive Functioning Abilities Predict Early Mathematics Achievement," Developmental Psychology 46, no. 5 (2010): 1176–1191; Kimberly Andrews Espy et al., "The Contribution of Executive Functions to Emergent Mathematic Skills in Preschool Children," Developmental Neuropsychology 26, no. 1 (2004): 465-486; David J. Purpura, Sara A. Schmitt, and Colleen M. Ganley, "Foundations of Mathematics and Literacy: The Role of Executive Functioning Components," Journal of Experimental Child Psychology 153 (2017): 15-34; Philip David Zelazo and Stephanie M. Carlson, "The Neurodevelopment of Executive Function Skills: Implications for Academic Achievement Gaps," Psychology and Neuroscience 13, no. 3 (2020): 273-298.
- 15 Carol McDonald Connor et al., "Reciprocal Effects of Self-Regulation, Semantic Knowledge, and Reading Comprehension in Early Elementary School," Child Development 87, no. 6 (2016): 1813– 1824.
- 16 Christopher J. Anthony and Julia Ogg, "Executive Function, Learning-Related Behaviors, and Science Growth from Kindergarten to Fourth Grade," Journal of Educational Psychology 112, no. 8 (2020): 1563-1581.
- 17 Nathaniel R. Riggs et al., "Executive Function and the Promotion of Social–Emotional Competence," Journal of Applied Developmental Psychology 27, no. 4 (2006): 300-309; Philip David Zelazo and Stephanie M. Carlson, "Reconciling the Context-Dependency and Domain-Generality of Executive Function Skills from a Developmental Systems Perspective," Journal of Cognition and Development 24, no. 2 (2022): 205–222; Philip David Zelazo, Clancy B. Blair, and Michael T. Willoughby, Executive Function: Implications for Education, NCER 2017-2000 (Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education, 2016); Adele Diamond, "Executive Functions," Annual Review of Psychology 64 (2013): 135–168.

- 18 Luna Beck et al., "Relationship Between Language Competence and Emotional Competence in Middle Childhood," Emotion 12, no. 3 (2012): 503; Deborah Laible and Jeanie Song, "Constructing Emotional and Relational Understanding: The Role of Affect and Mother-Child Discourse," Merrill-Palmer Quarterly 52, no. 1 (2006): 44–69; Katie A. Gilligan-Lee et al., "Aged-Based Differences in Spatial Language Skills from 6 to 10 Years: Relations with Spatial and Mathematics Skills," Learning and Instruction 73 (2021): 101417.
- 19 James Bellanca and Ron Brandt, 21st Century Skills: Rethinking How Students Learn (Bloomington, IN: Solution Tree Press, 2010).
- 20 Kimberly Brenneman, Judi Stevenson-Boyd, and Ellen C. Frede, "Math and Science in Preschool: Policies and Practice," in Policy Brief Series 19, ed. Ellen C. Frede and W. Steven Barnett (New Brunswick, NJ: National Institute for Early Education Research, 2009), 1–11; Lucia French, "Science as the Center of a Coherent, Integrated Early Childhood Curriculum," Early Childhood Research Quarterly 19, no. 1 (2004): 138-149.
- 21 Kay Cowan and Peggy Albers, "Semiotic Representations: Building Complex Literacy Practices Through the Arts," The Reading Teacher 60, no. 2 (2006): 124-137; Thalia R. Goldstein and Matthew D. Lerner, "Dramatic Pretend Play Games Uniquely Improve Emotional Control in Young Children," Developmental Science 21, no. 4 (2018): e12603; Christa Mulker Greenfader, Liane Brouillette, and George Farkas, "Effect of a Performing Arts Program on the Oral Language Skills of Young English Learners," Reading Research Quarterly 50, no. 2 (2015): 185–203; Christa Mulker Greenfader, "Building Executive Function Skills with Arts Activities," in Arts Integration in Diverse K-5 Classrooms, ed. Liane Brouillette (New York, NY: Teachers College Press, 2019), 107–120.
- 22 California Department of Education, English Language Arts/English Language Development Framework for California Public Schools: Kindergarten Through Grade Twelve (Sacramento, CA: California Department of Education, 2015)
- 23 National Academies of Sciences, Engineering, and Medicine, Promoting the Educational Success of Children and Youth Learning English: Promising Futures (Washington, DC: The National Academies Press, 2017), 507; Diane August, Peggy McCardle, and Timothy Shanahan, "Developing Literacy in English Language Learners: Findings from a Review of the Experimental Research," School Psychology Review 43, no. 4 (2014): 490–498; David K. Dickinson et al., "Cross-Language Transfer of Phonological Awareness in Low-Income Spanish and English Bilingual Preschool Children," Applied Psycholinquistics 25, no. 3 (2004): 323–347; Fred Genesee, "Dual Language Development in Preschool Children," in Young English Language Learners: Current Research and Emerging Directions for Practice and Policy (New York, NY: Teachers College Press, 2010), 59-79; Fred Genesee, "Rethinking Early Childhood Education for English Language Learners: The Role of Language," in Early Childhood Education in English for Speakers of Other Languages (UK: British Council, 2016), 21–42.

- 24 Code-switching is the use of two or more languages within a single phrase, sentence, or conversation. Code-switching is a skill that falls under the larger umbrella of translanguaging.
- 25 Translanguaging encompasses a multilingual individual's use of their full language repertoire all of their knowledge about language—without separation of the languages. Translanguaging encompasses many skills and behaviors, such as code-switching, that allows a multilingual individual to use language fluidly.

References and Source Materials

- Administration for Children and Families. 2023. "What is Historical Trauma?" https://www.acf.hhs.gov/ trauma-toolkit/trauma-concept.
- Anthony, Christopher J., and Julia Ogg. 2020. "Executive Function, Learning-Related Behaviors, and Science Growth from Kindergarten to Fourth Grade." Journal of Educational Psychology 112 (8): 1563-1581.
- August, Diane, Peggy McCardle, and Timothy Shanahan. 2014. "Developing Literacy in English Language Learners: Findings from a Review of the Experimental Research." School Psychology Review 43 (4): 490-498.
- Beck, Luna, Irina R. Kumschick, Michael Eid, and Gisela Klann-Delius. 2012. "Relationship Between Language Competence and Emotional Competence in Middle Childhood." Emotion 12 (3): 503.
- Bellanca, James, and Ron Brandt. 2010. 21st Century Skills: Rethinking How Students Learn. Bloomington, IN: Solution Tree Press.
- Brenneman, Kimberly, Judi Stevenson-Boyd, and Ellen C. Frede. 2009. "Math and Science in Preschool: Policies and Practice." In Policy Brief Series 19, edited by Ellen C. Frede and W. Steven Barnett. New Brunswick, NJ: National Institute for Early Education Research.
- Bustamante, Andres S., and Annemarie 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.
- California Department of Education. 2015. English Language Arts/English Language Development Framework for California Public Schools: Kindergarten Through Grade Twelve. Sacramento, CA: California Department of Education.
- California Department of Education. 2022. Creating Equitable Early Learning Environments for Young Boys of Color: Disrupting Disproportionate Outcomes. Sacramento, CA: California Department of Education.
- Clark, Caron A. C., Verena E. Pritchard, and Lianne J. Woodward. 2010. "Preschool Executive Functioning Abilities Predict Early Mathematics Achievement." Developmental Psychology 46 (5): 1176-1191.
- Connor, Carol McDonald, Stephanie L. Day, Beth Phillips, Nicole Sparapani, Sarah W. Ingebrand, Leigh McLean, Angela Barrus, and Michael P. Kaschak. 2016. "Reciprocal Effects of Self-Regulation, Semantic Knowledge, and Reading Comprehension in Early Elementary School." Child Development 87 (6): 1813-1824.

- Cowan, Kay, and Peggy Albers. 2006. "Semiotic Representations: Building Complex Literacy Practices Through the Arts." The Reading Teacher 60 (2): 124–137.
- Darling-Hammond, Linda, Lisa Flook, Channa Cook-Harvey, Brigid Barron, and David Osher. 2020. "Implications for Educational Practice of the Science of Learning and Development." Applied Developmental Science 24 (2): 97–140.
- Diamond, Adele. 2013. "Executive Functions." Annual Review of Psychology 64:135–168.
- Dickinson, David K., Allyssa McCabe, Nancy Clark-Chiarelli, and Anne Wolf. 2004. "Cross-Language Transfer of Phonological Awareness in Low-Income Spanish and English Bilingual Preschool Children." Applied Psycholinguistics 25 (3): 323–347.
- Espy, Kimberly Andrews, Melanie M. McDiarmid, Mary F. Cwik, Melissa Meade Stalets, Arlena Hamby, and Theresa E. Senn. 2004. "The Contribution of Executive Functions to Emergent Mathematic Skills in Preschool Children." Developmental Neuropsychology 26 (1): 465–486.
- Finno-Velasquez, Megan, Betsy Cahill, Rebecca Ullrich, and Hannah Matthews. 2018. "Heightened Immigration Enforcement and the Well-Being of Young Children in Immigrant Families: Early Childhood Program Responses." Zero to Three Journal: Family Separation and Parental Loss in Early Childhood 39 (1): 27-32.
- French, Lucia. 2004. "Science as the Center of a Coherent, Integrated Early Childhood Curriculum." Early Childhood Research Quarterly 19 (1): 138–149.
- Genesee, Fred. 2010. "Dual Language Development in Preschool Children." In Young English Language Learners: Current Research and Emerging Directions for Practice and Policy, edited by E. E. Garcia and E. C. Frede: 59–79. New York, NY: Teachers College Press.
- Genesee, Fred. 2016. "Rethinking Early Childhood Education for English Language Learners: The Role of Language." In Early Childhood Education in English for Speakers of Other Languages, edited by M. Evangelou and V. Murphy: 21–42. Oxford, UK: British Council.
- Giang, Ivana Tú Nhi, and Maki Park. 2022. California's Dual Language Learners: Key Characteristics and Considerations for Early Childhood Programs. Washington, DC: Migration Policy Institute.
- Gilligan-Lee, Katie A., Alex Hodgkiss, Michael S. C. Thomas, Pari K. Patel, and Emily K. Farran. 2021. "Aged-Based Differences in Spatial Language Skills from 6 to 10 Years: Relations with Spatial and Mathematics Skills." Learning and Instruction 73:101417.
- Goldstein, Thalia R., and Matthew D. Lerner. 2018. "Dramatic Pretend Play Games Uniquely Improve Emotional Control in Young Children." Developmental Science 21 (4).

- Greenfader, Christa Mulker. 2019. "Building Executive Function Skills with Arts Activities." In Arts Integration in Diverse K-5 Classrooms, edited by Liane Brouillette: 107-120. New York, NY: Teachers College Press.
- Greenfader, Christa Mulker, Liane Brouillette, and George Farkas. 2015. "Effect of a Performing Arts Program on the Oral Language Skills of Young English Learners." Reading Research Quarterly 50 (2): 185-203.
- Gruber, Matthias J., Bernard D. Gelman, and Charan Ranganath. 2014. "States of Curiosity Modulate Hippocampus-Dependent Learning Via the Dopaminergic Circuit." Neuron 84 (2): 486–496.
- Laible, Deborah, and Jeanie Song. 2006. "Constructing Emotional and Relational Understanding: The Role of Affect and Mother-Child Discourse." Merrill-Palmer Quarterly 52 (1): 44-69.
- Meek, Shantel, Darielle Blevins, Evandra Catherine, and Brittany Alexander. 2020. Start with Equity: California. Children's Equity Project.
- Murray, John S. 2019. "War and Conflict: Addressing the Psychosocial Needs of Child Refugees." Journal of Early Childhood Teacher Education 40 (1): 3–18.
- National Academies of Sciences, Engineering, and Medicine. 2017. Promoting the Educational Success of Children and Youth Learning English: Promising Futures. Washington, DC: The National Academies Press.
- National Association for the Education of Young Children. 2018. Advancing Equity and Diversity in Early Childhood Education: A Position Statement of the National Association for the Education of Young Children. Washington, DC: National Association for the Education of Young Children.
- National Council of Teachers of English. 2016. Equity and Early Childhood Education: Reclaiming the Child. Policy Brief. https://cdn.ncte.org/nctefiles/equityearlyedbrief.pdf.
- Osher, David, Pamela Cantor, Juliette Berg, Lily Steyer, and Todd Rose. 2020. "Drivers of Human Development: How Relationships and Context Shape Learning and Development." Applied Developmental Science 24 (1): 6–36.
- Purpura, David J., Sara A. Schmitt, and Colleen M. Ganley. 2017. "Foundations of Mathematics and Literacy: The Role of Executive Functioning Components." Journal of Experimental Child Psychology 153:15-34.
- Riggs, Nathaniel R., Laudan B. Jahromi, Rachel P. Razza, Janean E. Dillworth-Bart, and Ulrich Mueller. 2006. "Executive Function and the Promotion of Social-Emotional Competence." Journal of Applied Developmental Psychology 27 (4): 300-309.

- Scharf, Rebecca J., Christie Zheng, Christina Briscoe Abath, and Susanne P. Martin-Herz. 2021. "Developmental Concerns in Children Coming to the United States as Refugees." Pediatrics 147 (6).
- Science of Learning and Development Alliance. 2020. How the Science of Learning and Development Can Transform Education: Initial Findings. Science of Learning and Development Alliance.
- United States Census Bureau. 2022. "American Community Survey Data." https://www.census.gov/ programs-surveys/acs/data.html.
- U.S. Department of Education. 2022. "IDEA Part B Child Count and Educational Environments." IDEA Section 618 Data Products: Static Tables, 2021–22. https://data.ed.gov/dataset/idea-section-618data-products-static-tables-part-b-count-environ-table1/resources.
- U.S. Department of Education. 2022. "Part C Child Count and Settings." IDEA Section 618 Data Products: Static Tables, 2021–22. https://data.ed.gov/dataset/idea-section-618-data-products-static-tablespart-c-child-count-and-settings-table-1/resources.
- Yogman, Michael, Andrew Garner, Jeffrey Hutchinson, Kathy Hirsh-Pasek, Roberta Michnick Golinkoff, Committee on Psychosocial Aspects of Child and Family Health, and Council on Communications and Media, Rebecca Baum, Thresia Gambon, Arthur Lavin, Gerri Mattson, Lawrence Wissow, David L. Hill, Nusheen Ameenuddin, Yolanda (Linda) Reid Chassiakos, Corinn Cross, Rhea Boyd, Robert Mendelson, Megan A. Moreno, Jenny Radesky, Wendy Sue Swanson, Jeffrey Hutchinson, and Justin Smith. 2018. "The Power of Play: A Pediatric Role in Enhancing Development in Young Children." Pediatrics 142 (3).
- Zelazo, Philip David, Clancy B. Blair, and Michael 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, Philip David, and Stephanie M. Carlson. 2020. "The Neurodevelopment of Executive Function Skills: Implications for Academic Achievement Gaps." Psychology and Neuroscience 13 (3): 273-298.
- Zelazo, Philip David, and Stephanie 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): 205–222.
- Zosh, Jennifer M., Kathy Hirsh-Pasek, Emily J. Hopkins, Hanne Jensen, Claire Liu, Dave Neale, S. Lynneth Solis, and David Whitebread. 2018. "Accessing the Inaccessible: Redefining Play as a Spectrum." Frontiers in Psychology 9:1124.-