



# Crosswalk to Head Start’s Performance Standards and Early Learning Outcomes

## About LENA

LENA stands for Language ENvironment Analysis. LENA is a national nonprofit on a mission to transform children’s futures through early talk technology and data-driven programs. LENA’s early talk technology, sometimes referred to as a “talk pedometer” or a “FitBit® for conversation,” is the global standard for measuring early language environments, including conversational turns. Visit [www.LENA.org](http://www.LENA.org) or email [info@LENA.org](mailto:info@LENA.org) to learn more.

## How LENA Grow Supports Head Start

[LENA Grow](#) is an evidence-based professional development program that helps educators equitably improve classroom language environments in early learning settings, **supporting Head Start and Early Head Start’s focus on promoting school readiness within the Guiding Principles** (Office of Head Start, n.d.). LENA’s technology measures conversational turns, a metric strongly predictive of child outcomes. Conversational turns are simple back-and-forth verbal interactions between a child and an adult. Peer-reviewed research shows conversational turns have a positive impact on brain structure (Romeo et al., 2018a), brain function (Romeo et al., 2018b; Huber et al., 2023), executive functioning (Romeo et al., 2021), literacy skills (Weiss et al., 2022), vocabulary development (Duncan et al., 2022), social-emotional development (Gómez & Strasser, 2021), and middle school IQ scores (Gilkerson et al., 2018). Conversational turns are measured at the level of the classroom and individual child alike, providing **data-rich feedback reports designed to facilitate a practice-based coaching framework** that helps educators provide each and every child with the language support they need. Children in LENA Grow classrooms have shown increases in TS GOLD® language and literacy scores (Dynia, 2022; Heilmann & Moyle, 2022) and LENA Developmental Snapshot scores (LENA Foundation, 2022a). Research also shows that LENA Grow has a positive impact on social-emotional development, as measured by the Devereux Early Childhood Assessment, or DECA (LENA Foundation, 2022b). LENA Grow is implemented in a variety of early learning settings throughout the U.S., including private/state-funded child care centers, family child care homes, as well as Early Head Start and Head Start programs. Analysis shows LENA Grow helps improve CLASS® scores (LENA Foundation, 2023a and 2023c).

## Contents

- Crosswalk of LENA Grow Core Elements to the Head Start Performance Standards 3
- Using LENA Grow to Support Federal Review 8
- How LENA Grow Supports Head Start Early Learning Outcomes Framework (ELOF) 9
- Alignment of LENA Grow to Practice-Based Coaching 11
- References 12

### How LENA Grow Works



## Core Elements of LENA Grow

1. **Research base:** LENA Grow is rooted in over a decade of peer-reviewed research linking conversational turns to improved language, brain, and social-emotional development. More than 400 researchers and clinicians in over 40 countries have used LENA technology to study early language development (LENA Foundation, 2023b).
2. **Early talk strategies:** At each coaching session, teachers receive research-based curriculum materials that provide strategies for increasing interactive talk. Areas of focus include personal care, transitions, indoor play, outdoor play, mealtimes, shared reading, early math, early literacy, and songs & rhymes.
3. **LENA Room Report:** At each coaching session, teachers review the Room Report, which provides objective interaction data on overall room averages and child-specific averages. It reports the number of conversational turns in the classroom across the day.
4. **LENA Child Report:** The Child Report provides a detailed view of each individual child's experience across the day, including hourly counts of interactions and child vocalizations that highlight further engagement opportunities for teachers. This report is also used to engage families in a conversation about their child's early talk experiences and language development.
5. **Impact Report:** The LENA Grow Impact Report describes LENA Grow, defines turns, explains the importance of interactive talk, and displays the program's outcome data. Outcomes reported include the total number of children, teachers, and classrooms served, teacher sentiments about the program and its impact, and the numerical change in Conversational Turns from beginning to end of the sequence, including its statistical significance.
6. **Weekly strengths-based coaching:** LENA Grow coaches provide 30-60 minutes of coaching each week. The Coach Guide supports them in bringing a strengths-based lens to the data analysis and goal setting conversation with teachers.
7. **Weekly goal setting, documentation, and practice:** At each coaching session, the teacher sets a specific and measurable goal for the coming week. The teacher then documents progress toward that goal as they practice integrating early talk strategies throughout the week, including the next LENA Day.
8. **Family Engagement:** A Family Talk handout is provided each week for teachers to send home. Teachers also spend one coaching session developing a family engagement strategy and making plans for how they will engage families in extending quality interactions into the home setting.

## Crosswalk of LENA Grow Core Elements to the Head Start Performance Standards

LENA Grow is an evidence-based way for programs to foster **responsive and effective teacher-child interactions** that ensure high-quality, supportive learning environments and promote school readiness. LENA data counts conversational turns, which peer-reviewed research shows have a positive impact on a wide range of child outcomes.

Head Start Performance Standards		LENA Grow Professional Development Program: Core Elements							
		Research Base	Early Talk Strategies	LENA Room Report	LENA Child Report	Impact Report	Weekly Strengths-based Coaching	Weekly Goal Setting, Documentation, and Practice	Family Engagement
1301 Program Governance	1301.2 Governing Body (b)(2) "... must use ongoing monitoring results, data on school readiness goals..."					√			
	1301.3 Policy council and policy committee (c)(2) "... must use ongoing monitoring results, data on school readiness goals..."					√			
1302 Subpart C Education and Child Development Program Services	1302.30 Purpose. "... A center-based or family child care program must embed responsive and effective teacher-child interactions."	√	√	√	√		√	√	
	1302.31 Teaching and the learning environment. (a) <i>Teaching and learning environment</i> "... A program must also support implementation of such environment with integration of regular and ongoing supervision and a system of individualized and ongoing professional development, as appropriate."	√	√	√	√		√	√	
	1302.31 Teaching and the learning environment. (b) <i>Effective Teaching Practices</i> (1) "Emphasize nurturing and responsive practices, interactions, and environments... are communication and language rich."	√	√	√	√		√	√	

	(2) "Recognize bilingualism ... and implement research-based teaching practices that support their development."								
	<b>1302.31</b> Teaching and the learning environment. (e) <i>Promoting learning through approaches to rest, meals, routines and physical activity</i> (2) "...Snack and meal times must be... learning opportunities that support teaching staff-child interactions and foster communication and conversation..." (3) "...approach routines... and transitions. Between activities as opportunities for strengthening development."		√	√	√		√	√	
	<b>1302.33</b> Child screenings and assessments. (b) <i>Assessment for Individualization</i> (2) "...use information...to inform and adjust strategies to better support individualized learning and improved teaching practices..."		√	√	√		√	√	
	<b>1302.34</b> Parent and family engagement in education and child development services. (a) <i>Purpose</i> . "...must structure education and child development services to recognize parents' roles as children's lifelong educators, and encourage parents to engage in their child's education." (b) <i>Engaging parents and family members</i> . "A program must offer opportunities for parents and family members to be involved in the program's education services..."		√		√				√
<b>1302 Subpart D</b> Health Program Services	<b>1302.45</b> Child mental health and social and emotional well-being. (a) <i>Wellness promotion</i> (1) "Provides for ... positive learning environments; supportive teaching practices; and, strategies for supporting children with challenging behaviors and other social, emotional, and mental health concerns."	√	√	√	√		√	√	

<b>1302 Subpart E</b> Family and Community Engagement Program Services	<b>1302.50</b> Family Engagement. (a) <i>Purpose.</i> "A program must integrate parent and family engagement strategies into all systems and program services to support family well-being and promote children's learning and development." (b) <i>Family Engagement Approach.</i> (1) "... implement intentional strategies to engage parents in their children's learning and development..."		√		√			√
<b>1302 Subpart I</b> Human Resources Management	<b>1302.92</b> Training and professional development (b)(5) Research-based approaches to professional development for education staff that are focused on ...providing effective and nurturing adult-child interactions... and use of data to individualize learning experiences to improve outcomes for all children.	√	√	√	√	√	√	√
	<b>1302.92</b> Training and professional development (c) A program must implement a research-based, coordinated coaching strategy for the education staff that (1) Assess all education staff to identify strength, areas of needed support and which education staff would benefit from intensive coaching.	√	√	√		√	√	√
<b>1304 Subpart B</b> Designation Renewal	<b>1304.16</b> Use of CLASS: Pre-K instrument in the Designation Renewal System "... ACF will conduct observations of multiple classes operated by the grantee... using CLASS: Pre-K instrument.		√	√	√		√	√

## How LENA Grow Supports Head Start Performance Standards

On the following pages, see further explanations of how the LENA Grow core elements support Head Start Performance Standard parts.

### 1301: Program Governance

*1302.2 Governing Body 1301.3 Policy council and policy committee.* The LENA Grow Impact Report describes LENA Grow, defines turns, explains the importance of interactive talk, and displays the program's outcome data. This data can assist administrators in targeting classroom and professional development needs necessary to ensure teachers are providing responsive teacher-child interactions and language-rich learning environments that support each child's school readiness. The Impact Report's "By the Numbers" section shows the scope of the program's impact in the specified date range, including the total number of participating classrooms, children, and teachers; the number of classrooms and children whose participation was sufficient for impact evaluation; and the number of teachers whose full participation resulted in teacher certification. The "Child Impact: All Children" section shows the average change in turns per hour for all children included in the sample and how the program's conversational turns rates compare to those of all other LENA Grow programs. The "Child Impact: Equity" section measures the program's impact on talk equity, concentrating on those children who experience less interaction than their classroom peers and those children who experience less interaction than the nation average. This report demonstrates how teachers have created more equitable interactions for children experiencing less talk than their peers.

### 1302 Subpart C: Education and Child Development Program Services

*1302.30 Purpose.* Encouraging responsive and effective teacher-child interactions in classroom environments is a primary objective of LENA Grow. The reflective feedback cycle, based on best practices from the Practice-Based Coaching Framework, helps teachers strengthen responsive caregiving and promotes continuous improvement.

*1302.31 Teaching and Learning Environment.* LENA Grow's coaching sessions, room-level data reports, and individual child reports help teachers focus on increasing the quantity of conversational turns in their classrooms. LENA data focuses on conversational turns because peer-reviewed research has linked conversational turns not just to language development (Gilkerson et al., 2018), but also to brain structure (Romeo et al., 2018a), brain function (Romeo et al., 2018b), executive functioning (Romeo et al., 2021), literacy skills (Weiss et al., 2022), vocabulary development (Duncan et al., 2022), and social-emotional development (Gómez & Strasser, 2021) early in life. MRI technology has visually shown the relationship between interactive language experiences and brain activity, including white matter growth (Huber et al., 2023).

The reports show hour-by-hour data, helping teachers focus on specific times of day to better understand how engaged children are during different activities. They also show individual child data, helping teachers understand the kinds of supports and activities that are most effective and engaging for each child and where there are opportunities for increased engagement. In week 4 of LENA Grow, teachers focus on interaction during mealtimes, using the Conversation Starters poster for ideas. Talking Tip #11, "Repeat and add to what they say and do," encourages teachers to expand children's understanding. In week 2 of LENA Grow, teachers focus on maximizing interaction during personal care routines and transitions, using the Conversation Starters poster for ideas. Talking Tip #1, "Talk about what you're doing and thinking," encourages teachers to narrate their expectations and describe what is happening to help children transition more effectively.

*1302.33 Child screenings and assessments.* Program evaluations have shown LENA Grow to support child assessment outcomes and increase the ability of teachers to individualize curriculum and set developmental goals that focus on promoting interaction and language development (Dyenia, 2022; Heilmann & Moyle, 2022). Objective data on each child's language environment, along with individualized feedback sessions on how to interpret the data, supports teachers in setting goals for lasting positive behavior change. This results in positive outcomes for the young children they are supporting. LENA Grow classrooms have shown increases in TS GOLD® (LENA Foundation, 2023a), DECA (LENA Foundation, 2022b), and LENA Developmental Snapshot scores (LENA Foundation, 2022a). Objective data reports provide both hourly counts and daily averages to support teachers in creating and achieving intentional, measurable goals for increased interactive conversation with individual children.

### **1302 Subpart D: Health Program Services**

*1302.45 Child mental health and social and emotional well-being.* LENA Grow helps teachers foster positive, responsive adult-child relationships. Teachers receive research-based curriculum materials that provide ideas on how to effectively engage young children during times of the day that may be stressful for them, including personal care routines and transitions. They also practice strategies for promoting socialization during mealtimes.

Peer-reviewed research has established a causal link between increased conversational turns and improved social-emotional competencies in the first three years of life (Gómez & Stresser, 2021). Furthermore, research has shown LENA Grow to have impacts on children's social and emotional health, including improved DECA scores (LENA Foundation, 2022b).

### **1302 Subpart E: Family and Community Engagement Program Services**

*1302.50 Family Engagement.* LENA Grow embeds a family engagement component into each week of the program, including an activity in week 2, in which teachers create an action plan for family engagement. Handouts focused on the importance of interaction for brain development can be shared with the family to create a shared understanding of a child's language experiences. These resources can be shared in person, electronically, or on paper, and are designed to encourage a two-way conversation about how to provide a child with the interaction they need to thrive. Resources are available in both English and Spanish, and the 14 Talking Tips are available in 12 languages. Additionally, the LENA Child Report provides a window into the child's language experience in the classroom and can be shared to deepen ongoing school-home communication.

### **1302 Subpart I: Human Resources Management**

*1302.92 Training and professional development* The LENA Grow Feedback Cycle is based on best practices from the Practice-Based Coaching Framework. LENA Grow helps teachers form a reflective practice habit that equitably improves the classroom language environment and builds responsive relationships. It helps them not only understand the *how* but also the *why* of what they practice, building skills in data literacy, goal setting, and child observation. The LENA Grow program sequence is designed with the flexibility to support a program's goals, as well as those of individual education staff. The LENA Grow Coach Guide provides week-by-week guidance for each coaching session, including weekly coaching intentions, teacher learning objectives, "caring coaching" callouts to enhance a focus on equity and inclusion, and checklists for facilitating each session.

LENA Grow has been shown as a responsive and effective professional development program. LENA Grow has the potential to reduce teacher turnover through increased teacher self-efficacy (Dydia, 2022). Survey data consistently verify 90+ percent of teachers report an increase in confidence and job satisfaction after completing LENA Grow, and 95+ percent either like or love the program and would recommend the program to other early childhood teachers (LENA Foundation, 2023c).

## 1304 Subpart B Designation Renewal

*1304.16 Use of CLASS: Pre-K Instrument in the Designation Renewal System.* LENA's 14 Talking Tips, used throughout the program, align with the domains and dimensions of the Pre-K CLASS®. Analysis shows LENA Grow helps improve CLASS® scores (LENA Foundation, 2023c).

## Using LENA Grow to Support Federal Review

LENA Grow has been used by EHS/HS programs to demonstrate effectiveness in several performance measure domains during the annual Head Start federal review process (LENA Foundation, 2023e). Alongside many other areas of alignment, programs have specifically shown that they are meeting criteria for measures within the domain of "Monitoring and Implementing Quality Education and Child Development Services" by showing how LENA Grow supports education staff in:

- Creating nurturing and responsive learning environments (PM2.2/HSPPS 1302.31(b)(1)(i))
- Engaging in child-teacher interactions, socialization, development, and learning at all times, including daily routines and mealtimes (PM2.4/HSPPS 1302.31(e))
- Using data to individualize learning experiences to improve outcomes for all children (PM3.1/HSPPS 1302.92(b)(5))
- Identifying strengths, areas of needed support, and which education staff would benefit from intensive coaching (PM3.3/HSPPS 1302.92(c)(1))



## How LENA Grow Supports Head Start Early Learning Outcomes Framework (ELOF)

LENA Grow is an evidence-based way for programs to foster responsive and effective teacher-child interactions that ensure high-quality, supportive learning environments that promote children’s skills, behaviors, and knowledge needed for later school success.

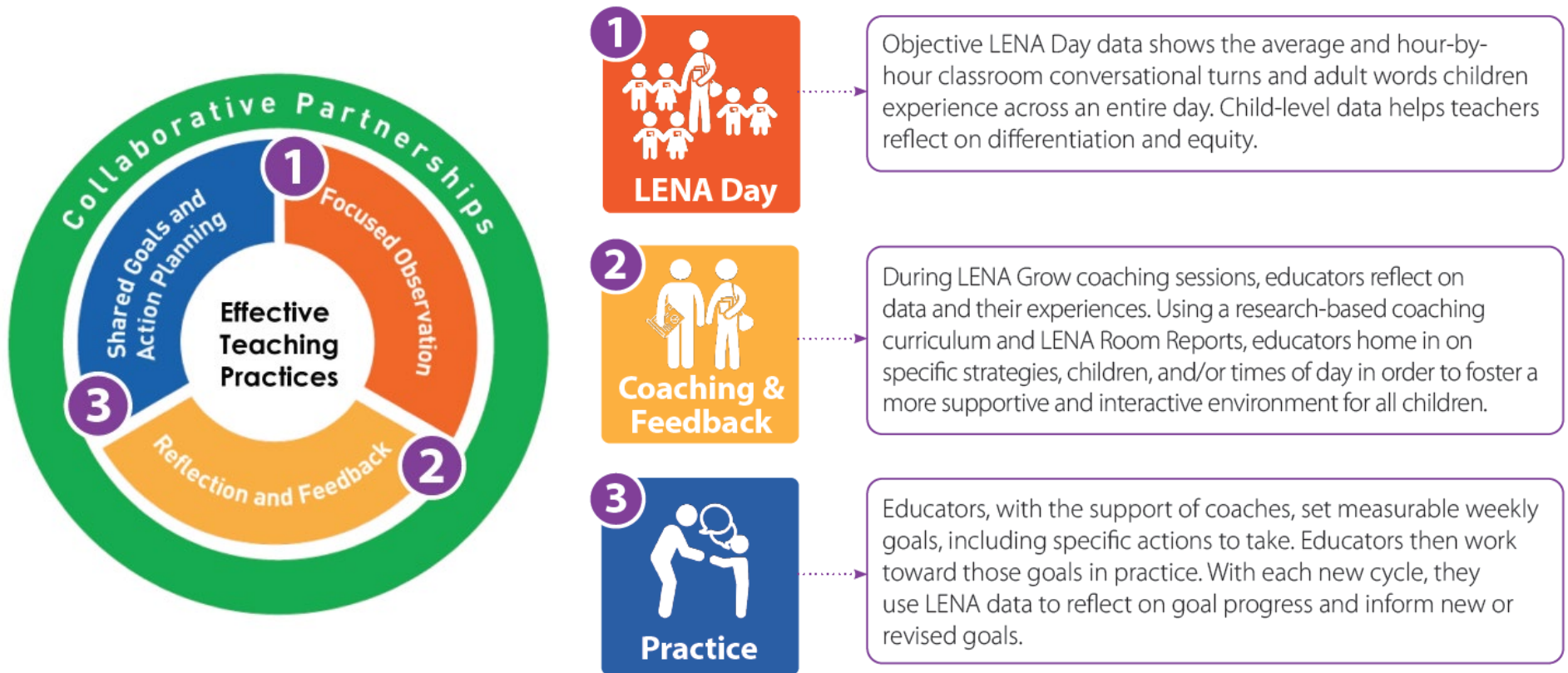
Head Start Early Learning Outcomes Framework			How LENA Grow Supports
Central Domain	Infant Toddler Sub-Domains	Preschool Sub-Domains	
Approaches to Learning	Emotional and Behavioral Self-Regulation		LENA Grow increases interactive talk between teachers and the children in their care, strengthening responsive caregiving. During coaching sessions, teachers review classroom- and child-level data, review strategies, and set individualized goals that support children’s approaches to learning. Teachers receive research-based curriculum materials that provide ideas on how to creatively engage young children during personal care routines, as well as indoor and outdoor play. Utilizing the 14 Talking Tips, teachers support children in communicating about basic needs. Throughout the program, teachers receive strategies that help promote children’s initiative, curiosity, and creativity.
	Cognitive Self-Regulation (Executive Functioning)		
	Initiative and Curiosity		
	Creativity		
Social and Emotional Development	Relationships with Adults		LENA Grow helps teachers foster positive, responsive adult-child relationships. Teachers receive research-based curriculum materials that provide ideas on how to effectively engage young children during times of the day that may be stressful for them, including personal care routines and transitions. They also practice strategies for promoting socialization during mealtimes.  Peer-reviewed research has established a causal link between increased conversational turns and improved social-emotional competencies in the first three years of life (Gómez & Strasser, 2021). Furthermore, research has shown LENA Grow to have impacts on children’s social and emotional health, including improved DECA scores (LENA Foundation, 2022b).
	Relationships with Other Children		
	Emotional Functioning		
	Sense of Identity and Belonging		
Language and Literacy	Attending and Understanding		LENA Grow supports interactive talk among teachers and children, promoting language development and literacy. Teachers receive research-based curriculum materials that provide strategies on how to increase interactive talk by creating joint attention, increasing conversational turn-taking, and recasting. Areas of focus include shared reading, early literacy, and songs & rhymes.  Children in LENA Grow classrooms have shown increases in TS GOLD® scores (Dynia, 2022; Heilmann & Moyle, 2022) and LENA Developmental Snapshot scores (LENA Foundation, 2022a). In addition, peer-reviewed research has shown a link between increased conversational turns in preschool settings and improved vocabulary scores (Duncan et al., 2022).
	Communicating and Speaking		
	Vocabulary		
	Emergent Literacy	Phonological Awareness	
Print and Alphabet Knowledge			

Head Start Early Learning Outcomes Framework			How LENA Grow Supports
Central Domain	Infant Toddler Sub-Domains	Preschool Subdomains	
Cognition	Exploration and Discovery		During the LENA Grow sequence, teachers practice new strategies to scaffold children’s cognitive development. Teachers receive research-based curriculum materials that provide strategies on how to effectively engage young children, creating joint attention, increasing conversational turn-taking, and recasting.
	Memory		
	Reasoning and Problem-Solving		
	Emergent Mathematical Thinking	Counting and Cardinality	Teachers receive research-based resources that provide strategies for increasing interactive talk, focusing on indoor play, outdoor play, mealtimes, and early math. Teachers receive strengths-based coaching, review classroom- and child-level data, set measurable goals, and practice new strategies, improving their ability to promote problem-solving and scaffold children’s math skills.
		Measurement	
		Geometry and Spatial Sense	
	Imagination and Symbolic Representation	Scientific Inquiry	Peer-reviewed research has linked conversational turns to brain structure (Romeo et al., 2018a), brain function (Romeo et al., 2018b), reading skills (Weiss et al, 2022), and executive functioning (Romeo et al., 2021) early in life, as well as IQ scores and language skills in adolescence (Gilkerson et al, 2018).
Reasoning and Problem-Solving			
Perceptual, Motor, and Physical Development	Health, Safety, and Nutrition		LENA Grow helps teachers build interactive talk into care routines. Teachers receive research-based curriculum materials that provide ideas on how to effectively engage young children during times of the day that include physical health and self-care. Areas of focus include personal care routines, transitions, and mealtimes.

\*The Subdomains Perception, Gross Motor, and Fine Motor are not explicitly addressed in the LENA Grow program.

## Alignment of LENA Grow to Practice-Based Coaching

LENA Grow is a tool in the toolkit for coaches who use Practice-Based Coaching. LENA Grow's five-week sequence follows the cycle of Practice-Based Coaching, focusing on the evidence-based practice of increasing conversational turns (back-and-forth interactions). During the program, teachers are encouraged to explore effective teaching practices by focusing on LENA's 14 Talking Tips, research-based techniques for increasing early talk and supporting healthy language development.



## References

- Duncan, R., et al. (2022). Predictors of preschool language environments and their relations to children's vocabulary. *Infant and Child Development* 32(1). <https://doi.org/10.1002/icd.2381>
- Dynia, J. (2022). *The Impact of a Language-Based Intervention with Individualized Coaching in Early Childhood Education Classrooms* [White paper]. SproutFive Center for Early Childhood Innovation. [https://drive.google.com/file/d/1dIN71WcKQ\\_FZAxnTWOWfNQihmCoAXCul/view](https://drive.google.com/file/d/1dIN71WcKQ_FZAxnTWOWfNQihmCoAXCul/view)
- Gilkerson, J., et al. (2018). Language Experience in the Second Year of Life and Language Outcomes in Late Childhood. *Pediatrics* 142(4). <https://doi.org/10.1542/peds.2017-4276>
- Gómez, E., & Strasser, K. (2021). Language and socioemotional development in early childhood: The role of conversational turns. *Developmental Science*, 24(5). <https://doi.org/10.1111/desc.13109>
- Heilmann, J., & Moyle, M. (2022). *Evaluation of LENA Grow in Milwaukee Head Start Classrooms* [White paper.] Next Door Milwaukee. [https://www.nextdoormke.org/wp-content/uploads/2023/01/2022-Evaluation-of-LENA-Grow-in-Milwaukee-Head-Start-Classroom\\_Research.pdf](https://www.nextdoormke.org/wp-content/uploads/2023/01/2022-Evaluation-of-LENA-Grow-in-Milwaukee-Head-Start-Classroom_Research.pdf)
- Huber, E., et al. (2023). Language Experience During Infancy Predicts White Matter Myelination at Age 2 Years. *Journal of Neuroscience* 43(9): 1590-1599. <https://doi.org/10.1523/JNEUROSCI.1043-22.2023>
- LENA Foundation (2022a). Preliminary findings suggest LENA Grow accelerates language development. *LENA Blog*. <https://www.lena.org/lena-grow-developmental-snapshot-preliminary-results/>
- LENA Foundation (2022b). Research shows links between LENA Grow participation and social-emotional growth. *LENA Blog*. <https://www.lena.org/research-shows-links-between-lena-grow-participation-and-social-emotional-growth/>
- LENA Foundation (2023a). Coaching for impact in Sarasota County: Increased TS GOLD® and CLASS® scores. *LENA Blog*. <https://www.lena.org/lena-grow-coaching-child-care-sarasota/>
- LENA Foundation (2023b). *LENA's impact is powered by partnerships*. <https://lena.org/where-are-LENA-programs>
- LENA Foundation (2023c). *LENA Grow Program Impact* [Brochure]. <https://www.lena.org/LENA-Grow-Impact>
- LENA Foundation (2023d). "Mae Mae's House": One teacher's story behind on evaluation of LENA Grow in Milwaukee. *LENA Blog*. <https://www.lena.org/lena-grow-evaluation-next-door-teacher-story/>
- LENA Foundation (2023e). How Early Head Start/Head Start grantees use LENA Grow to meet performance standards during federal review. *LENA Blog*. <https://www.lena.org/head-start-performance-standards-federal-review-lena-grow/>

- Office of Head Start (n.d.). *Interactive Head Start Early Learning Outcomes Framework: Ages Birth to Five*. <https://eclkc.ohs.acf.hhs.gov/interactive-head-start-early-learning-outcomes-framework-ages-birth-five>
- Romeo, R., et al. (2018a). Language Exposure Relates to Structural Neural Connectivity in Childhood. *Journal of Neuroscience* 38(36): 7870-7877. <https://doi.org/10.1523/JNEUROSCI.0484-18.2018>
- Romeo, R., et al. (2018b). Beyond the 30-Million-Word Gap: Children’s Conversational Exposure Is Associated with Language-Related Brain Function. *Psychological Science* 29(5). <https://doi.org/10.1177/0956797617742725>
- Romeo, R., et al. (2021). Neuroplasticity associated with changes in conversational turn-taking following a family-based intervention. *Developmental Cognitive Neuroscience* 49. <https://doi.org/10.1016/j.dcn.2021.100967>
- Weiss, Y., et al. (2022). Language input in late infancy scaffolds emergent literacy skills and predicts reading related white matter development. *Frontiers in Human Neuroscience* 16. <https://doi.org/10.3389/fnhum.2022.922552>