

SHARED MEASURES OF SUCCESS TO PUT NORTH CAROLINA CHILDREN ON A PATHWAY TO GRADE-LEVEL READING



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NC PATHWAYS TO GRADE-LEVEL READING—IT'S **OUR MOMENT**

North Carolina has much to be proud of when it comes to educating young children. We were the first state to make full-day kindergarten universally available. We pioneered the nation's first comprehensive early childhood initiative, Smart Start, to improve the quality of child care, provide access to health screenings and offer support to families. We launched NC Pre-K (formerly More at Four) to provide at-risk children with high quality learning environments. We are leading the nation in developing a kindergarten through third grade formative assessment.

To make these things happen, citizens, policymakers, state leaders, organizations and many others took bold action in unprecedented ways. As a result, more of our children are in high quality child care, our prekindergarten program is among the best in the country, and we have the highest rate of developmental screenings in the nation.

It's a track record to be proud of—and to build on.

IT'S OUR MOMENT

It's time to build on North Carolina's history of innovation and success to tackle one of the greatest challenges facing the state: the overwhelming majority of our children, especially those from low-income families, are not reading proficiently by the end of third grade. Reading well in the early grades predicts a child's academic and career success.

Research shows that improving third grade reading takes a coordinated birth-through-age-eight approach that focuses on children's health and development, families and communities and high quality learning environments with regular attendance. It takes aligned policies and practices all working toward a common vision.

The NC Pathways to Grade-Level Reading (Pathways) initiative is bringing together diverse leaders working across disciplines—health, family and community support, and early learning and education; across sectors—government, policy, private and nonprofit; across systems—birth-through-age-five and kindergarten-through-third-grade; and across the political aisle. These leaders are asking what is possible.

What would be possible if—

- ▶ We adopted shared, whole child, birth-through-age-eight measures that put children on a pathway to grade-level reading?
- ▶ We aligned policies and practices that were rooted in how children develop?
- ▶ We coordinated strategies to support children's optimal development beginning at birth?

And people are acting. Together, Pathways stakeholders are co-creating shared measures, aligned policies and coordinated strategies that support children's success.

Pathways is an initiative of the NC Early Childhood Foundation in collaboration with NC Child, The North Carolina Partnership for Children, Inc., and BEST NC.

PATHWAYS TO GRADE-LEVEL READING PRINCIPLES

- ▶ We will be data-and research-driven and informed by developmental science.
- ▶ We commit to acknowledging and eliminating systemic inequities and racial, ethnic, socioeconomic and ability disparities in early childhood experiences, opportunities, and outcomes.
- ▶ We will focus on the whole child, birth-through-age-eight, in the context of his or her family and community, using a multi-dimensional systems lens.
- ▶ We will be transparent, collaborative and accountable to one another.
- ▶ We will be informed by and hold ourselves accountable to families and communities.
- ▶ We will have a strength-based approach, highlighting protective factors and preventative solutions, and be guided by compassion.
- ▶ We will work to ensure that each child has the opportunity to fulfill his or her potential.
- ▶ We will prioritize solutions that are actionable and sustainable, and we will have high expectations of what is achievable.
- ▶ We will be results-oriented, embracing innovation and seeing change as opportunity.

BRAINS ARE BUILT, NOT BORN.

North Carolina is facing a growing skills gap. By 2020, 67 percent of jobs in the state will require some post-secondary education. Yet the majority of North Carolina fourth graders are not proficient in a key predictor of future success—reading. Those who read well go on to graduate, but those who aren't reading well by the end of third grade are four times more likely to drop out of high school.

Grade-level reading is achievable with policies and practices that reflect the science—reading is a cumulative process that develops from birth and is rooted in early brain development.

WHY BIRTH THROUGH AGE EIGHT?

In the words of Harvard University pediatrician Jack Shonkoff, “Brains are built, not born.” Brain scientists have discovered that during children’s earliest years, their experiences are built into their bodies—shaping the brain’s architecture and creating the foundation for future learning. Everything a child experiences from birth impacts that child’s ability to fulfill his or her potential.

- ▶ Child development is a dynamic, interactive process that is not predetermined. It occurs in the context of relationships, experiences and environments.
- ▶ Every experience a baby has forms a neural connection in the brain at a rate of more than a million synapses per second in the early years.
- ▶ Not all will last. Connections that get used more strengthen, and those used less fade.
- ▶ Just like building a house, what comes first builds a foundation for all that comes later.
- ▶ Reading proficiency is a cumulative process that is rooted in early brain development.
- ▶ The early years are so defining that by the time a child turns eight, his or her third grade outcomes can predict future academic achievement and career success.

Decades of research have established what children need to build strong brains—health and development on track from birth, supportive and supported families and communities, and high quality birth-through-age-eight learning environments with regular attendance.

ECONOMISTS AGREE

After years of research into how to most effectively and efficiently develop human capital, Nobel Laureate Professor James J. Heckman concludes, “The foundation for school, career and life success is largely determined through the development of cognitive and character skills beginning in children’s earliest years.”

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- ▶ Georgetown Public Policy Institute, *Recovery: Job Growth and Education Requirements through 2020*
 - ▶ Center on the Developing Child at Harvard University
 - ▶ The Heckman Equation

MEASURES OF SUCCESS FRAMEWORK

The Measures of Success Framework was developed by the Pathways Data Action Team—30 experts from North Carolina’s leading universities, research institutes, government agencies, businesses and think tanks—in partnership with Pathways to Grade-Level Reading partners.

The Data Action Team identified the following criteria to determine which measures to include in the framework:

- ▶ **Research-based.** Connected clearly to the top-line result through research.
- ▶ **Actionable.** Is something that can be reasonably affected through state or local legislation; policy, program or practice change; or community action.
- ▶ **Impactful.** Will impact the lives of a number of NC children and families.
- ▶ **Easily Communicated.** Can be easily understood by parents, policymakers, and other key stakeholders.
- ▶ **Decreases Inequities.** Will reduce gaps and inequities that currently exist among North Carolina populations.

The Framework evolved with input from the NC Pathways to Grade-Level Reading Learning Teams. Learning Teams included content, data and policy experts who identified trends, inequities, patterns and connections in the NC data, as well as data gaps.

The framework does not include everything that moves the needle on grade-level reading or capture everything that impacts each outcome. It presents what Pathways stakeholders recommend as the best framework for North Carolina to improve early literacy outcomes for young children.

At the center of the Framework is the Pathways Vision. It is surrounded by what the research says children need to be on a pathway to grade-level reading. Pathways thinks of these as **Goals**, and they include:



Health and Development on Track Beginning at Birth



Supported and Supportive Families and Communities



High Quality Birth-through-Age-Eight Learning Environments with Regular Attendance

Surrounding the goals are **Measures of Success**. These researched-based measures help to quantify progress toward a Goal and are tied to grade-level reading by the end of third grade.

Not depicted in this graphic, but defined in the pages that follow, are the **Pathways Influencers**. These are measures that move, or influence, the Pathways Measures of Success and also have research connecting them to early literacy.

The final circle encompasses **Community Conditions** in which children live. These conditions influence, and frequently drive, child outcomes—when these conditions are positive, as shown in the diagram, children are more likely to thrive; when these conditions are negative, children are more likely to struggle. Pathways prioritizes mitigating conditions that negatively impact a child’s ability to fulfill his or her potential.

NC PATHWAYS TO GRADE-LEVEL READING MEASURES OF SUCCESS FRAMEWORK



**PATHWAYS
BIRTH-THROUGH-AGE-EIGHT
LITERACY DEVELOPMENT
MILESTONES**

Language Skills on Track at 24, 36 and 48 Months

Developmentally Ready at Kindergarten Entry

Meeting Expected Growth in Reading (K-3)

Reading at Grade-Level by the End of Third Grade

All children with disabilities achieve expressive and receptive communication skills commensurate with their developmental ages.

RESEARCH BASIS FOR THE FRAMEWORK

The Pathways to Grade-Level Reading Data Action Team was tasked with translating the research behind what moves third-grade reading proficiency into a framework of measures that would help North Carolina’s leaders, teachers, providers and parents know how our children are doing on the pathway to early literacy. The Data Action Team intentionally created a framework that describes what we need to know about our children’s progress, without limiting themselves to the data measures that North Carolina already collects and analyzes. As a result, while we have rich, disaggregated data on many of the measures, others are available only as statewide averages, and some are not currently collected at all. Others are collected, but not analyzed in a way that informs the questions Pathways is asking. Part of the Pathways Initiative will be data advocacy around those measures for which the state does not currently support and mandate collection.

Data definitions of the Measures of Success and Pathways Influencers are included in the pages that follow and were developed by the Data Action Team and refined by the Learning Teams. Brief research for each measure also is included, demonstrating the connections between the measures and third-grade reading proficiency. Finally, a list of sources is included for each group of measures.

- ▶ Literacy Milestones
- ▶ Health and Development on Track Beginning at Birth
- ▶ Supported and Supportive Families and Communities
- ▶ High Quality Birth-through-Age-Eight Learning Environments with Regular Attendance
- ▶ Community Conditions

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- ▶ Annie E Casey Foundation, *Early Warning Confirmed*
 - ▶ Georgia Family Connection Partnership, *Building a Path to Reading Proficiency*
 - ▶ National Institute for Early Education Research, *Early Literacy: Policy and Practice in the Preschool Years*
 - ▶ Rhode Island Kids Count, *Getting Ready: Findings from the National School Readiness Indicators Initiative, A 17 State Partnership*
 - ▶ Lisbeth Schorr, *Pathway to Children Ready for School and Succeeding at Third Grade*

LITERACY MILESTONES

On-track development of early language skills, being ready for kindergarten, and achieving expected reading growth in the early grades (K-3) are critical developmental milestones on the pathway to reading on grade level by the end of third grade. It is through these foundational Literacy Milestones that the Measures of Success and Pathways Influencers, outlined and defined in the following sections of the report, impact third grade reading outcomes.

EARLY LANGUAGE SKILLS

Percent of children on-track for language skills at 24, 36, and 48 months. Oral language skills (listening comprehension and oral language vocabulary) are foundational literacy skills, and early language proficiency is a predictor of school success. Early literacy skills, like size of vocabulary, are good predictors of children’s reading abilities throughout their educational careers. Language and literacy skills enable children to develop cognitive skills and knowledge and to interact effectively with peers and adults.

SCHOOL READINESS

Percent of children developmentally on-track at kindergarten entry. Research shows that it is critical to intervene early in order to address delays in any of the five domains of child development: cognition, approaches to learning, language and literacy, physical health and motor development, and social-emotional development. Children who enter kindergarten ready to learn are more likely to build on those foundational learning skills and grow into proficient readers by the end of third grade.

READING GROWTH (K-3)

Percent of children meeting expected growth in reading. Student growth in reading over the course of a school year is a proxy measure for the quality of the learning environment, leadership, and teaching, and demonstrates progress towards reading proficiently by the end of third grade.

THIRD GRADE READING PROFICIENCY

Percent of NC fourth-graders scoring “proficient” or higher on the National Assessment of Educational Progress (NAEP) fourth-grade reading assessment. Research demonstrates that reading proficiency by the end of third grade matters. Not only are children’s own perceptions of their abilities forming by then, but after this point in school, a child’s ability to learn is determined largely by his or her ability to read. Children who read proficiently by the end of third grade are more likely to succeed academically, graduate from high school ready for college and careers, and become successful, productive adults.

HEALTH & DEVELOPMENT ON TRACK BEGINNING AT BIRTH



Children’s health and development impacts their ability to learn, beginning at birth.

Good physical and emotional health helps ensure that children are successful learners from their earliest years, putting them on the pathway to becoming proficient readers—healthy children are more likely to be physically, cognitively, socially and emotionally ready for kindergarten, attend school consistently, and benefit from high-quality learning environments. Students who are often sick, have tooth pain, are dealing with chronic unmanaged or undiagnosed physical or behavioral health conditions, or who struggle with developmental delays and lack the services and supports they need are less likely than their peers to be reading on grade-level by the end of third grade.

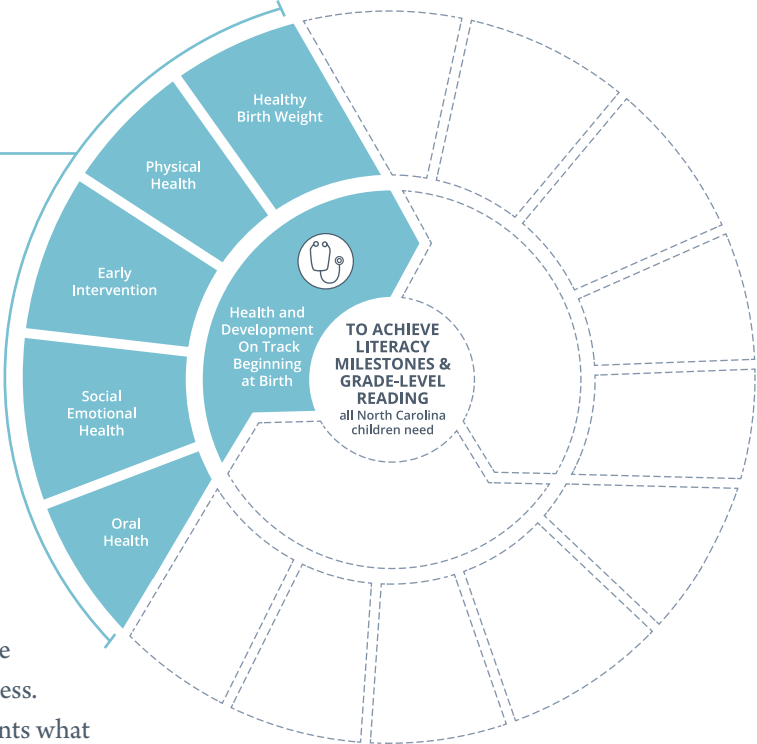
Children’s development during the first eight years of life is strongly affected by their health. Experiences during this time are hardwired into their brains and bodies, forming the foundation for all subsequent development. Good health in utero and good birth outcomes, access to needed health services, and families and communities that support health outcomes all increase the chances of good physical and social-emotional health and on-track development during childhood and throughout life.

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- ▶ Campaign for Grade-Level Reading, Healthy Readers Initiative
 - ▶ CDC, *Health and Academic Achievement*
 - ▶ Child Trends, *The Research Base for a Birth through Eight State Policy Framework*
 - ▶ Georgia Family Connection Partnership, *Building a Path to Reading Proficiency*
 - ▶ National Institute for Early Education Research, *Early Literacy: Policy and Practice in the Preschool Years*
 - ▶ Lisbeth Schorr, *Pathway to Children Ready for School and Succeeding at Third Grade*
 - ▶ Zero to Three, *Early Experiences Matter: A Guide to Improved Policies for Infants and Toddlers*

HEALTH & DEVELOPMENT PATHWAY

To reach our goal of Health and Development on Track Beginning at Birth, this pathway includes five research-based measures that help to quantify progress. These Measures of Success are impacted by a variety of Influencers, shown in the chart below, which have research-based connections to early literacy.

While all aspects of children’s healthy growth and development are intertwined, this visualization helps align the Influencers to inspire action strategies that move the Measures of Success. This is not an exhaustive list of factors. It represents what Pathways partners recommend as the best framework for North Carolina to improve early literacy for young children.



HEALTH & DEVELOPMENT MEASURES OF SUCCESS				
HEALTHY BIRTH WEIGHT	PHYSICAL HEALTH	SOCIAL EMOTIONAL HEALTH	ORAL HEALTH	EARLY INTERVENTION
THESE MEASURES OF SUCCESS ARE INFLUENCED BY				
ADULT HEALTH INSURANCE PRENATAL CARE SMOKING/ SUBSTANCE USE TEEN PREGNANCY	WELL-CHILD VISITS PARENT HEALTH INSURANCE MEDICAL HOME		CHILD HEALTH INSURANCE ACCESS TO DOCTORS & DENTISTS	
	FOOD SECURITY BREASTFEEDING		DENTAL CARE	DEVELOPMENTAL SCREENINGS, REFERRALS & SERVICE
	IMMUNIZATION HEALTHY WEIGHT PHYSICAL ACTIVITY HEALTHY EATING	SOCIAL EMOTIONAL SCREENINGS, REFERRALS & SERVICES		

HEALTH AND DEVELOPMENT ON TRACK, BEGINNING AT BIRTH ► MEASURES OF SUCCESS

HEALTHY BIRTH WEIGHT

Percent of babies born weighing less than 2500 grams (5.5 pounds). Infants born weighing less than 2,500 grams (5.5 pounds) are at greater risk for physical and developmental problems than infants of normal weight. Children who are born at a low birth weight are at higher risk for long-term illness or disability and are more likely to be enrolled in special education classes or to repeat a grade.

PHYSICAL HEALTH

Percent of parents reporting their child's health is excellent or good. Parents' self-reported health status of their children strongly correlates to their children's actual health, particularly at young ages. Healthy children are better able to engage in experiences crucial to the learning process.

SOCIAL EMOTIONAL HEALTH

Percent of children exhibiting self-regulation, good interpersonal skills, and no behavior problems. Emotional health and social competence enable children to participate in learning and form good relationships with teachers and peers. Research is increasingly finding that self-regulation and social-emotional health are among the most critical building blocks for children's learning.

ORAL HEALTH

Percent of children without untreated tooth decay. Tooth decay is the most common chronic childhood disease. Untreated dental problems can lead to secondary physical illness, delay overall development, compromise school attendance and performance, and interfere with psycho-social functioning.

EARLY INTERVENTION

Percent of children improving with early intervention services. Without appropriate supports and services in the early years, children with special educational needs are less likely to be ready for school and are at higher risk for poor educational outcomes.

HEALTH AND DEVELOPMENT ON TRACK, BEGINNING AT BIRTH ► **PATHWAY INFLUENCERS**

ADULT HEALTH INSURANCE

Percent of adults with health insurance. Healthy women and men are more likely to conceive healthy babies, and making sure adults have access to health insurance makes for a healthier adult population. Women with health insurance are also more likely to get timely and adequate prenatal care.

PRENATAL CARE

Percent of pregnant women who receive on-time prenatal care. Early, comprehensive prenatal care increases the likelihood that a child will be born healthy. Mothers who receive good prenatal care are less likely to have preterm or low birth weight infants and are more likely to obtain regular pediatric care for their young children.

SMOKING/SUBSTANCE USE

Percent of pregnant women who smoke, drink alcohol, misuse prescription drugs and/or use illegal substances. Prenatal smoking, drug or alcohol exposure can place the fetus at risk for a variety of negative outcomes, including low birth weight, poor coordination, problems with learning, and delays in mental skills during toddler years.

TEEN PREGNANCY

Rate of births per 1000 girls aged 15-19. Parental age is significantly related to child well-being. Children born to teenage mothers are more likely to be born with low birth weight, suffer poor health, and have lower levels of cognitive and educational attainment, lower levels of academic achievement, and higher levels of behavioral problems than children born to mothers age 20 and over.

WELL-CHILD VISITS

Percent of Medicaid-enrolled children receiving regular well-child visits. Well-child visits provide an opportunity to monitor children's physical and behavioral health and development, provide age-appropriate guidance to parents, and screen for maternal depression. Lack of health care or delays in treating children's health problems can negatively affect cognitive, emotional, behavioral, and physical development, sometimes with lifelong consequences.

CHILD HEALTH INSURANCE

Percent of children with health insurance. Children with health insurance are more likely to access primary health care services that can prevent health problems or address existing chronic or acute health conditions. Lack of health insurance can affect a child's school attendance and ability to participate in school activities.

PARENT HEALTH INSURANCE

Percent of parents with health insurance. When parents have health insurance coverage, children are more likely to have insurance, keep insurance, and access needed health care services. Parents with health insurance also are healthier and can better support children's development.

ACCESS TO DOCTORS & DENTISTS

Availability of pediatricians, family physicians and dentists (particularly those who accept Medicaid). Access to pediatricians, family practice physicians and dentists is necessary for monitoring children's health and referring to specialists as needed. Many rural areas lack sufficient doctors and dentists who accept Medicaid, which limits access to adequate medical care for children from low-income families.

IMMUNIZATION

Percent of children ages 19-35 months who are fully immunized. Receipt of timely, age-appropriate immunizations usually indicates that a child has access to regular medical care. Late or missing immunizations can result in preventable illnesses that can lead to long-term physical and developmental problems.

MEDICAL HOME

Percent of parents reporting they have a particular place to take their children for medical care (a medical home). Children with a regular medical care provider are more likely to receive prompt and appropriate care for acute and chronic conditions, as well as continuing preventive care. Consistent care ensures monitoring of and familiarity with children's health over time, awareness of the family, and also may avoid delayed diagnosis of health and developmental problems, worsening of existing conditions, and the occurrence of preventable conditions. Children without a regular medical provider are less likely to have timely immunizations.

HEALTHY WEIGHT

Percent of children whose height and weight falls into expected ranges.

When children are not within their expected height and weight ranges, they may be suffering from malnutrition, impairments in the caregiver-child relationship, or chronic illness. Being obese or underweight in infancy or early childhood can have long-term health and social consequences.

PHYSICAL ACTIVITY

Percent of children over age 6 who are physically active for 60 minutes per day, 5 days per week. Regular physical activity is important for overall health and development, helps children maintain a healthy weight, and creates healthy habits for the future. Students who are physically active tend to have better grades, school attendance, cognitive performance, and classroom behaviors.

HEALTHY EATING

Percent of children who eat the recommended dietary guidelines of fruits and vegetables. Good nutrition is critical for overall health and optimal learning and development. Eating a balanced diet sets children up for a lifetime of healthy eating. Lack of adequate consumption of specific foods, such as fruits and vegetables, and deficits of specific nutrients are associated with lower grades and higher rates of absenteeism and tardiness among students.

BREASTFEEDING

Percent of mothers who exclusively breastfeed for six months. Breastfeeding has both physical and emotional benefits for infants. Breastfeeding has a range of protective effects including decreasing the incidence and/or severity of respiratory, ear, and digestive infections, and diabetes. It may reduce the incidence of sudden infant death syndrome and allergic reactions. Breastfeeding promotes frequent tender physical contact between mother and infant and also may be related positively to children's cognitive development.

DENTAL CARE

Percent of children who have seen a dentist in the past year. Many childhood dental diseases, along with their negative consequences, can be prevented by providing early and comprehensive dental services to children. Pediatricians are uniquely situated to facilitate access to needed dental care through referrals.

FOOD SECURITY

Percent of children living in food insecure households. Malnutrition, undernutrition and inconsistent access to nutritious food in childhood can lead to greater vulnerability to illness and physical impairments, delays in development and stunted growth, decreased learning ability, lower levels of attention and increased behavior problems, fatigue, anxiety, decreased motivation, apathy, compromised emotional development, a higher frequency of school absence, and lower academic performance in primary school. Programs that provide nutrition to children, infants and pregnant and breastfeeding mothers—such as school lunches and breakfasts, summer food service and WIC—have been found to improve health, school performance and behavior.

SOCIAL EMOTIONAL SCREENING, REFERRALS & SERVICES

Percent of children screened for social-emotional needs, identified with social-emotional needs, referred for behavioral health services and receiving behavioral health services. A standardized pipeline of early and accurate screening, identification, referral and treatment of behavioral health needs is critical to ensuring children's good social-emotional health. Delays in screening and treatment, or untreated social-emotional health issues, can negatively impact children's well-being, including school outcomes, and increase treatment costs in the future.

DEVELOPMENTAL SCREENING, REFERRALS & SERVICES

Percent of children screened for developmental delays, identified with developmental delays, referred for early intervention services, and receiving early intervention services. Access to developmental screening and assessment throughout infancy and early childhood allows problems to be identified early and appropriate intervention to be delivered.

Equity, economic security, and social-emotional health of children and families are foundational conditions that impact all child and family outcomes reflected in this framework.

SUPPORTED AND SUPPORTIVE FAMILIES & COMMUNITIES

Supportive families and communities play a critical role in building strong foundations for learning. A stable, secure, nurturing relationship with a competent, caring adult is a key factor in helping young children be ready for school and read on grade level.



Children who experience toxic stress from early experiences with violence, neglect or abuse in their homes or communities can suffer from changes in the neural circuitry and chemical composition in the brain, making them less resilient over time, more likely to suffer from physical and mental illness, and less likely to meet early literacy goals. Positive parent and child interactions, such as talking, playing, eating meals, and reading together helps children grow stronger emotionally, develop larger vocabularies, and learn to read more easily.

Families need to be supported to ensure children’s optimal development. Both formal family support services and informal support networks can help buffer the negative effects of living conditions like poverty and family stress, which can compromise the quality of parent and child interactions. Mental health and substance abuse services and resources that build parents’ skills and knowledge about child development can improve caregivers’ capacity to effectively parent and improve children’s early literacy outcomes.

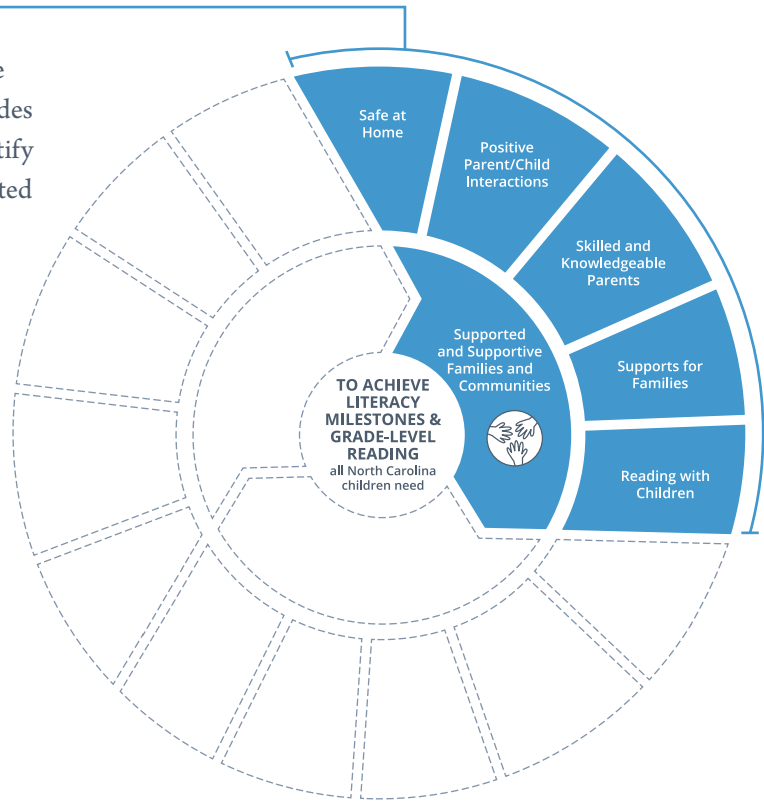
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- ▶ Annie E Casey Foundation, *The First Eight Years: Giving Kids a Foundation for Lifetime Success*
 - ▶ Center for Public Education, *Learning to Read, Reading to Learn*
 - ▶ Centers for Disease Control and Prevention, *CDC-Kaiser ACE Study*
 - ▶ Child Trends, *The Research Base for a Birth through Eight State Policy Framework*
 - ▶ Barbara Fiese, *Reclaiming the Family Table: Mealtimes and Child Health and Wellbeing*
 - ▶ Georgia Family Connection Partnership, *Building a Path to Reading Proficiency*
 - ▶ Scholastic, *Family and Community Engagement Research Compendium: Access to Books*
 - ▶ Lisbeth Schorr, *Pathway to Children Ready for School and Succeeding at Third Grade*
 - ▶ Zero to Three, *Research Summary: Children Exposed to Violence*

FAMILIES & COMMUNITIES

PATHWAY

To reach our goal of Supported and Supportive Families and Communities, this pathway includes five research-based measures that help to quantify progress. These Measures of Success are impacted by a variety of Influencers, shown in the chart below, which have research-based connections to early literacy.

While all aspects of children’s families and communities are intertwined, this visualization helps align the Influencers to inspire action strategies that move the Measures of Success. This is not an exhaustive list of factors. It represents what Pathways partners recommend as the best framework for North Carolina to improve early literacy for young children.



FAMILIES & COMMUNITIES MEASURES OF SUCCESS				
SAFE AT HOME	POSITIVE PARENT/CHILD INTERACTIONS	READING WITH CHILDREN	SUPPORTS FOR FAMILIES	SKILLED AND KNOWLEDGEABLE PARENTS
THESE MEASURES OF SUCCESS ARE INFLUENCED BY				
MATERNAL EDUCATION PARENT EDUCATION SUPPORTS		PAID LEAVE TREATMENT ACCESS		
SUBSTANCE USE PARENTAL DEPRESSION PARENTAL ADVERSE CHILDHOOD EXPERIENCES		POVERTY SCREENING		
	FAMILY MEALS	BOOKS IN HOME		

SUPPORTED AND SUPPORTIVE FAMILIES AND COMMUNITIES ► MEASURES OF SUCCESS

SAFE AT HOME

Rate of investigated/assessed child abuse or neglect. Child abuse and neglect are linked to language deficits, reduced cognitive functioning, social and behavioral difficulties, and attention deficit disorders. The incidence of child abuse and neglect is reduced when protective factors (such as social support, high quality reliable out-of-home child care, access to treatment of depression, and decent housing) are strengthened, and risk factors (such as poverty, social isolation, absence of supportive adults, and violence in the home or neighborhood) are lessened.

POSITIVE PARENT/CHILD INTERACTIONS

Average number of minutes per day that parents talk or play with their children. The opportunity to form secure attachments with sensitive, nurturing caregivers is critical to children's cognitive and social-emotional growth. The lack of a warm, positive relationship with parents/caregivers increases the risk that children develop major behavioral and emotional problems, including substance abuse, antisocial behavior, and juvenile delinquency. Talking to children plays a direct role in building their vocabularies and strengthening their early literacy skills. A "word gap" between children from low-income and middle-income families predicts gaps in academic achievement.

READING WITH CHILDREN

Average number of days per week that parents read to their children. Reading to children promotes a child's cognitive and emotional growth and strengthens parent-child bonding. A positive correlation exists between regular parental book reading and young children's language development, early reading achievement, and school readiness.

SUPPORTS FOR FAMILIES

Percent of new mothers reporting access to sufficient social supports. Both formal and informal services and supports that help families obtain basic necessities and that enhance protective factors all contribute to children's overall well-being and increase families' abilities to deal with a range of issues.

SKILLED & KNOWLEDGEABLE PARENTS

Percent of parents reporting sufficient knowledge of child development and parenting skills. Parents with greater knowledge of child development and parenting skills better support their children's early learning and development. Skilled and knowledgeable parents are better able to expose their children to activities and educational opportunities that can help them succeed.

SUPPORTED AND SUPPORTIVE FAMILIES AND COMMUNITIES ► PATHWAY INFLUENCERS

MATERNAL EDUCATION

Percent of births to mothers with at least a 12th grade education. Children of mothers with at least a high school education tend to have better school readiness, better health, increased likelihood of finishing school, more supportive home learning environments, and more parent involvement in their schools.

PARENT EDUCATION SUPPORTS

Availability of in-home visiting, parent education, and family preservation programs, and rate of parents who participate in those programs. Factors such as poverty, low education and family stress can compromise the quality of parent-child relationships by limiting opportunities for stimulating and responsive interactions, provision of emotional support, and exposure to activities that can enrich children's health, knowledge and skills. Family support programs can increase family engagement and parents' knowledge of child development; improve parenting skills; provide work supports; help families access health and nutrition services, job training, or treatment for substance abuse; and reduce parental stress.

PAID LEAVE

Percent of families with access to the Family Medical Leave Act. Children whose parents do not have paid parental leave or who cannot afford to take unpaid leave are more likely to attend school when sick, less likely to see doctors when they become ill, and miss out on health, social-emotional and developmental benefits that come from spending time with attentive parents.

TREATMENT ACCESS

Percent of parents with access to mental health, domestic violence and substance abuse services. Parents suffering from mental illness, domestic violence and/or substance abuse have less capacity to provide what their children need to succeed. Treatment for these conditions can improve caregivers' ability to parent and provide for their children, thereby improving children's outcomes.

PARENTAL ADVERSE CHILDHOOD EXPERIENCES

Percent of adults with fewer than three adverse childhood experiences (ACEs). Higher numbers of ACEs result in worse health and well-being outcomes throughout life. As the number of ACEs increases, so does the risk for poor academic achievement, poor physical and mental health, substance abuse, financial stress, domestic violence, suicide attempts and unintended pregnancies. Parents struggling with the lifelong impacts of ACEs have less capacity to provide what their children need to succeed.

SUBSTANCE ABUSE

Percent of parents who misuse substances. Children exposed to drugs in utero and raised in homes with ongoing parental drug use are more likely to display problems with cognitive development when compared with children exposed to drugs in utero but raised in drug-free environments.

PARENTAL DEPRESSION

Percent of parents screened for depression at well-child visits, identified with depression, referred for services, and receive services for depression. Parents who are depressed experience feelings of sadness, stress, inability to sleep, and other symptoms that can compromise their ability to parent their children effectively. Young children with depressed mothers are more likely than other children to demonstrate social-emotional and behavior problems, difficulties in school, trouble with self-control, poor peer relationships and aggression. Mothers and fathers suffering from depression are less likely to interact with, play with or read to their children.

FAMILY MEALS

Frequent family meals have been associated with achievement of developmental milestones like vocabulary growth, academic achievement, overall better health, and positive behavioral outcomes.

BOOKS IN HOME

Percent of students reporting 25 or more books in their home. Access to print materials improves children's reading skills. Children's book distribution and ownership programs are shown to have positive behavioral, educational, and psychological outcomes. According to research, a child whose home has 25 books will, on average, complete two more years of school than would a child from a home without any books at all.

POVERTY SCREENING

Percent of families screened for poverty at well-child visits. Child poverty is linked with a range of negative outcomes, including diminished academic achievement, more health problems and lower nutrition, and lower overall well-being. Screening for poverty at primary care visits can help health care providers connect families with community programs, financial supports and other opportunities they need to become self-sufficient.

Equity, economic security, and social-emotional health of children and families are foundational conditions that impact all child and family outcomes reflected in this framework.

HIGH QUALITY BIRTH-THROUGH-AGE- EIGHT **LEARNING** **ENVIRONMENTS** WITH REGULAR ATTENDANCE

Children’s first eight years are a developmental continuum that lay the foundation for all of the years that follow. Early, consistent, high-quality educational supports with continuity of practice and integrated support services from birth through age eight promote and sustain children’s developmental gains.



High-quality child care, prekindergarten programs, and elementary school environments help prepare children for school and life success. Though children from low-income backgrounds benefit the most, middle-income children benefit substantially from high-quality early education, and benefits outweigh costs for children from both middle- and low-income families. High-quality programs are culturally competent, work to fully understand and adapt to the home cultures of the children in their care, and use effective, developmentally-appropriate curricula to build their students’ foundational learning skills. Effective schools also take into account students’ social-emotional development by maintaining positive discipline and healthy school climates.

High-quality programs also provide needed supports and resources to teachers and staff to ensure high-quality, consistent teaching in early learning classrooms. Strong, effective early childhood teachers and leaders who are well-educated and well-trained in child development and child mental health and who tailor learning experiences to meet each child's needs are more likely to help their students achieve grade-level reading proficiency.

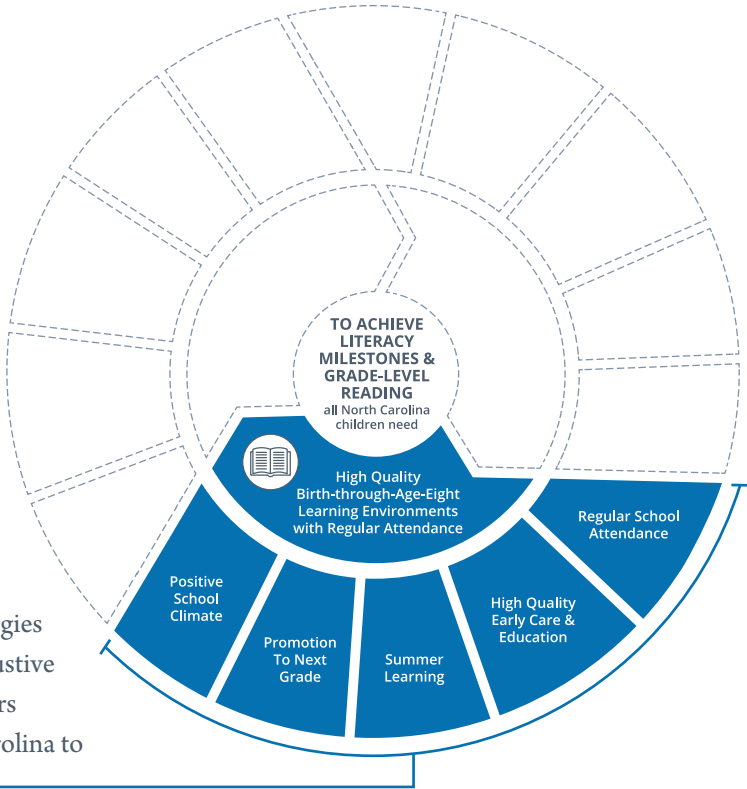
To benefit from excellent teaching and effective school environments, students must attend school regularly. Many policies can impact student attendance, including avoiding disciplinary tactics that remove young students from the classroom. Maintaining learning while students are not in school—namely during the summer months—is critical for achieving early-grade reading proficiency.

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- ▶ American Institutes for Research, *A Climate for Academic Success: How School Climate Distinguishes Schools that are Beating the Achievement Odds*
 - ▶ Annie E Casey Foundation, *Early Warning! Why Reading by the End of Third Grade Matters*
 - ▶ Bazelon Center for Mental Health Law, *Fact Sheet: Positive Behavior Supports and School Achievement*
 - ▶ Brookings Institution, *Is Retaining Students in the Early Grades Self-Defeating?*
 - ▶ Campaign for Grade-Level Reading, *Attendance in the Early Grades: Why it Matters for Reading*
 - ▶ Child Trends, *The Research Base for a Birth through Eight State Policy Framework*
 - ▶ Council of State Governments Justice Center and Texas A&M University Public Policy Research Institute, *Breaking Schools' Rules: A Statewide Study on How School Discipline Relates to Students' Success and Juvenile Justice Involvement*
 - ▶ Duke University Center for Child and Family Policy, *Impact of North Carolina's Early Childhood Programs and Policies on Educational Outcomes In Elementary School*
 - ▶ Educational Leadership, *Boosting Achievement by Pursuing Diversity*
 - ▶ Foundation for Child Development, *Investing in Our Future: The Evidence Base on Preschool Education*
 - ▶ Georgia Family Connection Partnership, *Building a Path to Reading Proficiency*
 - ▶ National Governor's Association, *A Governor's Guide to Early Literacy: Getting All Students Reading by Third Grade*
 - ▶ Rhode Island Kids Count, *Getting Ready: Findings from the National School Readiness Indicators Initiative, A 17 State Partnership*
 - ▶ Lisbeth Schorr, *Pathway to Children Ready for School and Succeeding at Third Grade*
 - ▶ US Department of Education Office for Civil Rights, *Civil Rights Data Collection (CRDC) Snapshot: School Discipline*
 - ▶ United States Department of Education, *A Matter of Equity: Preschool in America*

HIGH QUALITY LEARNING PATHWAY

To reach our goal of High Quality Birth-through-Age-Eight Learning Environments with Regular Attendance, this pathway includes five research-based measures that help to quantify progress toward this goal. These Measures of Success are impacted by a variety of Influencers, shown in the chart below, which have research-based connections to early literacy.

While all aspects of children’s learning environments are intertwined, this visualization helps align the Influencers to inspire action strategies that the Measures of Success. This is not an exhaustive list of factors. It represents what Pathways partners recommend as the best framework for North Carolina to improve early literacy for young children.



HIGH QUALITY LEARNING MEASURES OF SUCCESS				
HIGH QUALITY EARLY CARE & EDUCATION	SCHOOL CLIMATE	REGULAR SCHOOL ATTENDANCE	GRADE LEVEL PROMOTION	SUMMER LEARNING
THESE MEASURES ARE INFLUENCED BY				
SUSPENSION AND EXPULSION TEACHER AND ADMINISTRATOR EDUCATION TRAUMA-INFORMED EDUCATION SPECIAL EDUCATION TEACHER AND ADMINISTRATOR KNOWLEDGE OF CHILD DEVELOPMENT		DIVERSE SCHOOLS SUPPORTED TRANSITIONS SPECIALIZED TEACHER TRAINING CULTURAL COMPETENCE		
NATIVE LANGUAGE SUPPORT AFFORDABLE HIGH QUALITY CHILD CARE HIGH QUALITY PRE-KINDERGARTEN		SCHOOL STABILITY		QUALITY SUMMER LEARNING PROGRAMS

HIGH QUALITY BIRTH-THROUGH-AGE-EIGHT LEARNING ENVIRONMENTS WITH REGULAR ATTENDANCE ► MEASURES OF SUCCESS

HIGH QUALITY BIRTH-THROUGH-AGE-EIGHT EARLY CARE & EDUCATION

Percent of children birth-through-age-eight receiving high quality early care and education (centers, family homes and schools). Children who attend high quality early education programs and elementary schools are better prepared for success in school—academically, socially and emotionally. Economically disadvantaged three- and four-year-old children who participate in high-quality preschool programs have better school achievement, social skills and behavior than children who do not participate in a preschool experience or who are enrolled in a low-quality program. Children in higher quality programs have more advanced language and math skills, more advanced social skills, and warmer relationships with their teachers.

POSITIVE SCHOOL CLIMATE

Percent of early care and education programs and schools integrating social-emotional strategies. Students show better academic and social-emotional outcomes when they learn in positive school climates, where they feel safe, connected and engaged.

PROMOTION TO NEXT GRADE

Percent of children promoted to next grade (K-3). A large body of research suggests that students retained in the early years achieve at lower levels, are more likely to drop out of high school, and have worse social-emotional outcomes than similar students who are promoted.

REGULAR SCHOOL ATTENDANCE

Percent of children with regular attendance in early care and education programs and schools. Children, particularly those with multiple risk factors, benefit from regular attendance in child care, where they establish good attendance and learning habits. Consistent school attendance in the early grades helps boost children's academic learning, achievement, and motivation. Early chronic absenteeism is associated with lower academic achievement, truancy in middle school, school dropout, delinquency, and substance abuse. The educational experience of all children is impacted when teachers must divert their attention to meet the needs of chronically absent children when they are in school.

SUMMER LEARNING

Percent of children who maintain literacy gains over the summer. While middle-income students tend to hold steady or gain in learning over the summer, low-income students lose ground, likely because students from disadvantaged families are less able to access educational resources than their more advantaged peers during the summer months. The cumulative effects of year-after-year summer learning loss contributes to the achievement gaps between higher- and lower-income students. Learning opportunities and book access during the summer months can contribute to children's short- and long-term outcomes.

HIGH QUALITY BIRTH-THROUGH-AGE-EIGHT LEARNING ENVIRONMENTS WITH REGULAR ATTENDANCE ► **PATHWAY INFLUENCERS**

SUSPENSION & EXPULSION

Percent of birth-through-age-eight children suspended and expelled from programs and schools. Child care, preschool and elementary school discipline policies that result in students losing instructional time can cause students to fall behind and be retained in grade. Research has shown that racial and ethnic minorities and students with disabilities are disproportionately affected by school discipline policies that focus on suspensions and expulsions, and that the disproportionality begins as early as preschool.

TEACHER & ADMINISTRATOR EDUCATION

Percent of birth-through-age-eight early childhood teachers and administrators with post-secondary early childhood education, by degree (associate, bachelor's).

Early care and education programs (including preschool programs, center-based child care programs, family child care homes and elementary schools) with highly qualified staff are more likely to produce positive outcomes for children's learning and development. Research shows that preschool teachers with at least a four-year degree and specialized training in early childhood are more effective and more actively engaged with the children they teach. Research on the qualifications of teachers working with young children demonstrates associations between high-quality environments for young children and qualifications that are specific to early childhood (for example, a degree in an early care and education or an early childhood-related field).

TEACHER & ADMINISTRATOR KNOWLEDGE OF CHILD DEVELOPMENT

Percent of birth-through-age-eight early childhood teachers and administrators with early childhood/child development-specific knowledge and competencies. Principals and teachers trained in child development and how children learn oral and written language are best equipped to teach children to read. Teachers who provide both instructional and emotional support improve children's academic outcomes. Improving the quality of teachers narrows race- and income-based achievement gaps: a child in poverty who has a good teacher for five years in a row makes learning gains large enough, on average, to close completely the achievement gap with higher-income students.

DIVERSE SCHOOLS

Percent of children who attend schools that reflect the socioeconomic diversity of their school districts. Students from low-income families have higher school achievement if they attend mixed-income schools, and all students do better as the percentages of poor students in their schools decrease. Ensuring that students attend mixed-income schools whenever possible can lead to better outcomes for all.

SUPPORTED TRANSITIONS

Percent of children attending schools that systematically involve child care programs and families before school transition. A smooth transition into kindergarten and between grades forms the basis for later academic achievement and success. Children experience a smoother transition when they enter school when there is coordination among schools, early childhood programs, and parents. When schools have a systemic relationship with parents and early childhood programs, the open communication promotes greater problem solving, language development, and learning among children. Family engagement during the preschool years can set the stage for engagement in school in the early grades and beyond.

TRAUMA-INFORMED EDUCATION

Percent of teachers who receive professional development on children's mental health, including trauma. The warmth and support of a teacher influences the development of important capabilities in children, including greater social competence, fewer behavior problems, and enhanced thinking and reasoning skills at school age. Birth-through-age-eight teachers trained on issues around trauma are better positioned to provide safe and effective learning environments for children with social-emotional needs.

SPECIALIZED TEACHER TRAINING

Percent of teachers working with special populations, including English language learners and children with disabilities, who receive specific training/coaching for these populations. All children, regardless of background characteristics, benefit from high-quality birth-through-age-eight care and education experiences; however, children from diverse backgrounds could need, in addition, specialized supports in early childhood settings to maximize their ability to benefit from these experiences. Studies of existing pre-service and other professional development opportunities indicate that issues related to poverty, diversity, children who are dual language learners, and children with special needs are not adequately addressed in teacher training and professional development.

SPECIAL EDUCATION

Percent of children (K-3) receiving special education services. Low special education rates—if good screening and referral procedures are in place—can signal a birth-through-age-eight system that is serving its youngest children well. Early detection and intervention of learning differences, high quality early childhood programs, home visits and summer programs for very young children, and alignment between the early care and K-12 systems have all been shown to reduce the need for special education placements, thereby improving outcomes for children and decreasing longer-term public expenditures.

NATIVE LANGUAGE SUPPORT

Percent of students with access to programs in native language. Young English-language learners' early literacy skills are built by hearing and being read to in their native languages, in addition to English. Learning in more than one language strengthens cognitive development for all children.

AFFORDABLE HIGH QUALITY CHILD CARE

Percent of estimated eligible children under age six receiving child care subsidies. Families rely on child care to enable them to work and to provide the early education experiences needed to prepare their children for school. The high cost of child care puts quality care and early education out of reach for many, particularly low-income families. Access to child care subsidies helps families afford higher quality child care and improves continuity of child care.

Percent of families paying 10 percent or less of income on child care. Families that must spend a large portion of income on child care often cannot afford high quality, or regulated, care. Spending more on child care may mean that children's other needs are going unmet.

HIGH QUALITY PRE-KINDERGARTEN

Percent of estimated eligible four-year-olds attending NC Pre-K. NC Pre-K is a high-quality early education program that shows clear educational benefits for the children who attend, including higher reading and math scores, lower rates of special education placements, and lower rates of grade retention.

SCHOOL STABILITY

Percent of children who changed early care and education programs or schools within the past year. Consistency and stability in early child care and education affects children's social competence, behavioral outcomes, cognitive outcomes, language development, school adjustment, and overall child well-being. Frequent school changes during the early grades (K-3) are associated with retention in grade, behavioral problems, lower academic achievement, and lower high school graduation and college completion rates.

QUALITY SUMMER LEARNING PROGRAMS

Rate of summer learning programs. Access to high quality summer learning programs for students from low-income families can help limit summer learning loss and reduce the income-based achievement gap.

Equity, economic security, and social-emotional health of children and families are foundational conditions that impact all child and family outcomes reflected in this framework.

COMMUNITY CONDITIONS



Children living in safe and economically viable families and neighborhoods, with stable housing and limited environmental health hazards, are more likely to be successful in school and in life.

Living conditions such as poverty, housing instability, environmental toxins and neighborhood crime can compromise children’s school success and healthy development. These conditions can limit opportunities for stimulating and responsive interactions, provision of emotional support, and exposure to activities that can enrich children’s health, knowledge and skills. Neighborhoods that have few resources or are unsafe limit children’s development by affecting parents’ willingness to engage with community resources, exposing children to violence and physical hazards such as lead poisoning, and contributing to the level of stress that children experience.

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- ▶ Campaign for Grade-Level Reading, Healthy Readers Initiative
 - ▶ Center for Public Education, *Learning to Read, Reading to Learn*
 - ▶ Child Trends, *The Research Base for a Birth through Eight State Policy Framework*
 - ▶ Georgia Family Connection Partnership, *Building a Path to Reading Proficiency*
 - ▶ National Institute for Early Education Research, *Early Literacy: Policy and Practice in the Preschool Years*
 - ▶ Lisbeth Schorr, *Pathway to Children Ready for School and Succeeding at Third Grade*
 - ▶ Zero to Three, *Research Summary: Children Exposed to Violence*

COMMUNITY CONDITIONS

FAMILY ECONOMIC SECURITY

Percent of families with children living above 200% of Federal Poverty Level.

Child poverty is linked with a range of negative outcomes including diminished academic achievement, more health problems, lower nutrition, and lower overall well-being. Children from extremely poor families tend to have lower cognitive skills, including reading, problem solving, and concentration ability, and experience greater developmental losses during the non-academic year.

Percent of children living in families that make a living wage. Caregivers who do not make a living wage may work full-time and still be unable to keep their families out of poverty.

HOUSING STABILITY

Percent of birth-through-age-eight children who are homeless. Homeless children develop more slowly and may develop serious emotional problems. They are more likely to get sick, have mental health problems, have academic problems, be victims of violence, exhibit delinquent or aggressive behavior, be behind academically and have social and emotional issues that result in poor academic performance, behavior problems and depression.

Percent of children with housing stability (family has not moved more than once in past 12 months). When children move frequently, it impacts their social capital and ability to learn because of disruptive absences from school, discontinuity of teaching styles, and insecure social relationships. Families that move frequently may be less successful at developing social ties and may be unfamiliar with available resources to help their children.

Percent of families who spend less than 30% of income on housing. Families with high housing costs are more likely to go without other basic necessities in order to pay for rent and utilities. High housing costs can increase the likelihood of frequent moves and doubling up with family members or friends.

ECONOMICALLY VIABLE NEIGHBORHOODS

Percent of children living in census tracts with poverty levels below 30%. Children growing up in neighborhoods with high rates of poverty are more likely to attend under-resourced and low-performing schools; have fewer playgrounds, parks and libraries; and have less access to high quality early education programs. Poor children in poor neighborhoods have lower test scores than poor children in middle-income neighborhoods.

SAFE NEIGHBORHOODS

Rate of reported violent crimes. Exposure to community violence is associated with negative outcomes for children, including reduced behavioral and social competence. Repeated exposure to violence threatens children's physical, intellectual, and emotional development.

Percent of adults living on block where it is safe for children to play outside. Perceived neighborhood safety impacts child development because it affects parents' willingness to use available resources such as parks, libraries, and children's programs. When parents feel connected to their neighborhood, their children benefit from community resources and collective socialization opportunities.

ENVIRONMENTAL HEALTH

Percent of children with elevated blood lead levels. Children with elevated blood lead levels are more likely to have a lowered IQ and behavioral problems, academic failure, need for special education services and increased risk of juvenile delinquency. Elevated blood lead levels in the early years are associated with intellectual impairments, attention and behavioral problems, and lower achievement in school.

Percent of children screened for elevated blood lead levels. Early detection of lead exposure, when followed by intervention, can prevent long-term damage. Children living in poverty have higher blood lead levels than other children and are more likely to experience adverse effects, due to the interaction of blood lead with other risk factors, especially poor nutrition.

TRAUMA-INFORMED COMMUNITIES

No data indicator as yet defined.

OPPORTUNITY FOR ALL

Across our state, some children are struggling more than others because they are not given a fair chance to do well. To understand who is most impacted, all Pathways measures are disaggregated by race/ethnicity, income and county, where available.

Strategies for action should strengthen opportunity for all. Our state's ability to thrive is undermined when not enough people have access to the range of positive environments and experiences that strengthen opportunity for our children. Because early experiences literally wire the brain for all the learning that follows, ensuring opportunity early in life is critical to children's futures and to our state's future.

APPENDIX

DATA ACTION TEAM

The Data Action Team met from January through April of 2016.

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NC Infant Mental Health Association

Laila Bell

NC Child

Jessica Murrell Berryman

Parent Representative & Business Owner,
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Child Care Services Association

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Mary Jones

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Pathways is an initiative of the NC Early Childhood Foundation in collaboration with NC Child, The North Carolina Partnership for Children, Inc., and BEST NC.

The NC Early Childhood Foundation **promotes understanding, spearheads collaboration, and advances policies** to ensure each North Carolina child is on track for lifelong success by the end of third grade.

www.buildthefoundation.org

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