SE1. RELATIONSHIPS WITH OTHERS

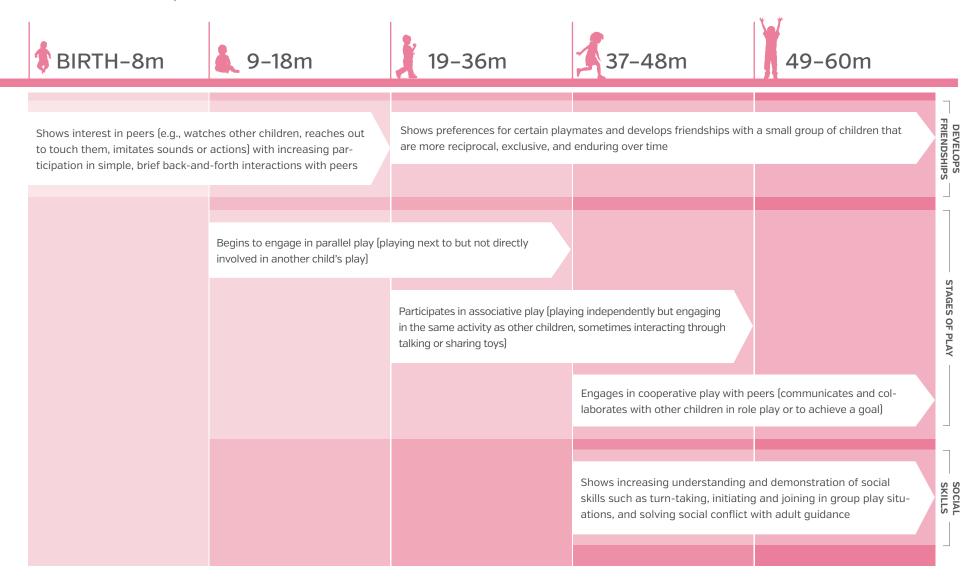
SE1.1 Forms trusting relationships with nurturing adults



^{*} Children's ability to separate from caregivers may depend upon their previous experiences and personal characteristics. Children who have not experienced significant time away from their primary caregivers (e.g., in an early care and education setting) or who are generally more cautious may need additional time to adjust to being away from their primary caregivers and form secure relationships with other adults.

SE1. RELATIONSHIPS WITH OTHERS

SE1.2 Interacts with peers



SE2. EMOTIONAL EXPRESSION AND UNDERSTANDING

SE2.1 Experiences, expresses, and regulates a range of emotions

\$ BIRTH−8m ♣ 9−18m		19-36m	3 7-48m	49-60m	
Expresses a range of basic emotions (e.g., joy, sadness ment, distress, interest, disgust, surprise, anger, fear)	s, content-	_	cation methods, and pretend play to motions (e.g., pride, embarrassment, rs		EXPF
facial expressions, gestures, and sounds			Shows increasing ability to construct emotional expression based on soci	, ,	EMOTION EXPRESSION
Uses adult support to calm self (e.g., relaxes when picked held by a familiar adult) and demonstrates some self-some behaviors (e.g., thumb/fist sucking, rocking, turning awas source of overstimulation)	oothing		Uses an expanding range of self-re support and modeling (e.g., taking muscles, verbal reasoning or refra quiet alone time)	deep breaths and relaxing	EMOTION REGULATION
Comforts self by supset	eeking a special to	by, object, or caregiver when			NOIT

^{*}Children's expressive behavior will depend in part on their culture's emotion display rules (the social norms that specify when, where, and how it is appropriate to express emotion). For example, some cultures and families emphasize maximizing positive emotions, whereas some other cultures place greater value on appearing calm rather than happy or excited. Some cultures and families also tend to encourage minimizing negative emotions, although others emphasize experiencing a balance between positive and negative emotions.

SE2. EMOTIONAL EXPRESSION AND UNDERSTANDING

SE2.2 Interprets and responds to the feelings of others



SE3. SELF-AWARENESS AND SELF-CONCEPT

SE3.1 Shows awareness of self as unique individual

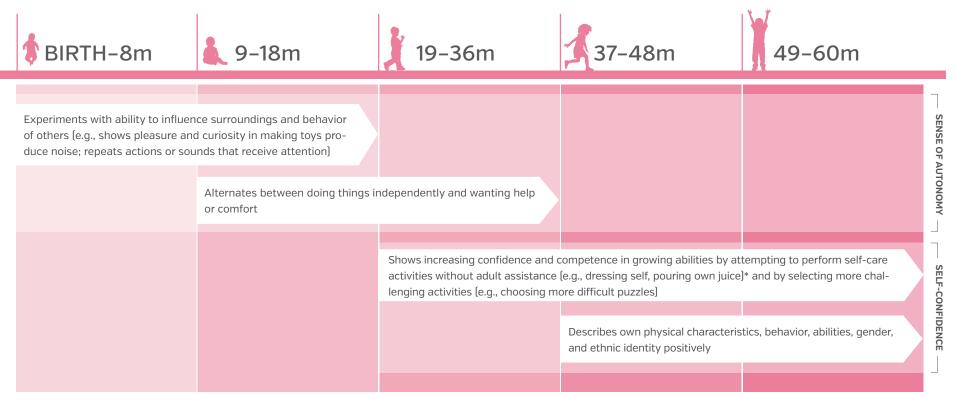
\$BIRTH-8	n	🧘 9–18m	19-36m	3 7-48m	49-60m	
Develops beginning se awareness (e.g., explo hands and feet, respon name)	res own		Uses first-person pronouns (e.g., n to themselves and shows growing "not mine"			SENSE OF IDENTITY
		Shows growing awareness of own recognizes self in mirror and in phonose when asked)	otos; points to eyes, ears, or			CH. OF S
			Recognizes similarities and differe personal characteristics (e.g., com color is different than their own, la	municates that a peers' hair	that others have different	CHARACTERISTICS OF SELF AND OTHERS
				interests, thoughts, beliefs, idea ferentiates themselves from oth one else in my family likes fish, b	ers (e.g., "I'm a fast runner," "No	
		Shows preferences for specific per activities and indicates dislike or u "no" (verbally, signing, shaking hea	nwillingness by communicating			PREFE
				terests and shows increasing ability er, "I like carrots because they're cru		PREFERENCES

^{*}Children may show variation in these skills based on whether independence or interdependence is valued in their family and culture.

Social and Emotional Development

SE3. SELF-AWARENESS AND SELF-CONCEPT

SE3.2 Demonstrates competence and confidence



^{*}Children may show variation in these skills based on whether early self-help skills are expected and taught and whether independence or interdependence is valued in their family and culture

Cognitive Development

A child's brain has been called "the most powerful learning machine in the universe." Cognitive development refers to the way in which a child takes in, stores, processes, and uses information. Early childhood researchers have made major advances in this area in recent years, and now better understand both what supports and hinders successful cognitive development. This area is particularly important to other areas of development and learning because of what researchers call executive function—the way the brain helps children to plan, focus attention, remember instructions, and juggle multiple tasks successfully.² These skills are vital to a child's future success because learning requires that a child focus on specific tasks to take in information, connect different pieces of information, and use information to solve problems or build new knowledge. Equally important, cognitive development is critical to social and emotional development in that it helps children understand and appropriately respond to the feelings and behaviors of others as well as adjust their behavior depending on the context of social situations. Positive relationships with adults, secure environments, and developmentally appropriate learning opportunities foster cognitive development. Arkansas's early childhood professionals must understand and support all of the different dimensions of cognitive development to promote school readiness and later success.

Areas of cognitive development in the standards

The Arkansas Child Development and Early Learning Standards focus on three areas of cognitive development:

- Approaches to learning outlines the developmental phases of a child's determination, curiosity, ability to complete a task, and acceptance of challenges.
- Executive function focuses on a child's attention and ability to ignore distractions; engagement in learning opportunities; flexible thinking; ability to adjust behavior in different contexts; impulse control; delay of gratification; and ability to hold and manipulate information in his or her memory.

· Logic and reasoning outlines the development of child's ability to solve problems; plan; engage in pretend play; understand symbolic representation; and the ability to think abstractly.

Potential warning signs of behavioral issues or developmental delay

Early childhood professionals play a key role in the early identification of cognitive delays. Although the early learning standards have been developed with the understanding that children's cognitive development will vary widely, there are signs that might indicate a developmental delay. The Centers for Disease Control and Prevention³ recommend talking with a medical or early childhood specialist if:

By 9 months, a child doesn't play any games involving back-and-forth play, doesn't respond to his or her own name, doesn't recognize familiar people, or doesn't look where you point.

By 18 months, a child doesn't point to show things to others, doesn't know what familiar things are, doesn't have at least 6 words or doesn't gain new words, or loses skills that he or she once had.

By 3 years old (36 months), a child drools or has unclear speech, can't work simple toys like peg boards or simple puzzles, doesn't understand simple instructions, or loses skills he or she once had.

By 4 years old (48 months), a child has trouble scribbling, shows no interest in interactive games or make believe, doesn't follow three-part directions, can't retell a favorite story, or loses the skills that he or she once had.

By 5 years old (60 months), a child is easily distracted or has trouble focusing on one activity for more than 5 minutes; can't tell what is real and what is make believe, can't give his or her first and last name, doesn't draw pictures, or loses skills he or she once had.

Gopnik, A., Meltzoff, A., & Kuhl, P.K. (1999). The scientist in the crib: Minds, brains, and how children learn. New York: William Morrow.

²Center on the Developing Child. [2012]. Executive function [InBrief]. Retrieved from www.developingchild.harvard.edu.

³Centers for Disease Control. (2009) Learn the signs: Act early. Atlanta, GA: Centers for Disease Control. Retrieved from: http://www.cdc.gov/ncbddd/actearly/pdf/checklists/all checklists.pdf

🛘 🖿 🖿 🖿 Cognitive Development

The indicators above may not include all of the signs of a cognitive delay. Early childhood professionals and parents know the young children in their care best. If there is a suspicion of a developmental delay, it is important to consult a medical or early childhood specialist.

Special considerations

Typically developing children will reach the cognitive development indicators at different ages. However, children who lack nurturing relationships with adults and/or have adverse experiences that cause high levels of stress for prolonged periods of time [known as toxic stress] may have impaired executive functioning or other cognitive delays.⁴ Children who live in extreme poverty, who lack stable relationships at home, or who live with drug or alcohol-dependent caregivers are more susceptible to toxic stress.⁵ It is important to note that children labeled with behavioral problems often are exhibiting behaviors that are the result of poor executive functioning skills that can be caused by adverse childhood experiences. The negative effects of these adverse experiences on cognitive development can be overcome by nurturing caregivers and supportive environments.⁶

Cognitive development can also be impacted by differences in culture. Children take in information based on what they experience and how they problem-solve issues in their daily lives. These experiences can be very different based on a child's cultural and linguistic background. Early childhood professionals should understand these cultural differences and how they may impact cognitive development. At the same time, emerging research indicates that children who are learning two languages at the same time have stronger executive functioning skills because they must switch between two languages, building their capacity for cognitive flexibility. This research represents another reason to support the development of a child's home language.

Finally, children with disabilities may demonstrate alternate ways of meeting the indicators of cognitive development. In particular, children with a cognitive impairment may reach many of the indicators, but at a different pace, and potentially in a different order than typically developing children. However, the goals for all children are the same, even though the path and the pace toward acheiving the goals may be different.

Cognitive Development: Key Takeaways

- Research on cognitive development highlights the importance of executive function—
 the way the brain helps children to plan, focus attention, remember instructions, and
 juggle multiple tasks successfully. These skills are vital to a child's future success
 because learning requires that a child focus on specific tasks to take in information,
 connect different pieces of information, and use information to solve problems or
 build new knowledge.
- Children labeled with behavioral problems often are exhibiting behaviors that are
 the result of poor executive functioning skills that can be caused by adverse childhood experiences.
- The negative effects of these adverse experiences on cognitive development can be overcome by nurturing caregivers and supportive environments.

⁴Blair, C. (2010). Stress and the development of self-regulation in context. *Child Development Perspectives*, 4, 181-188.

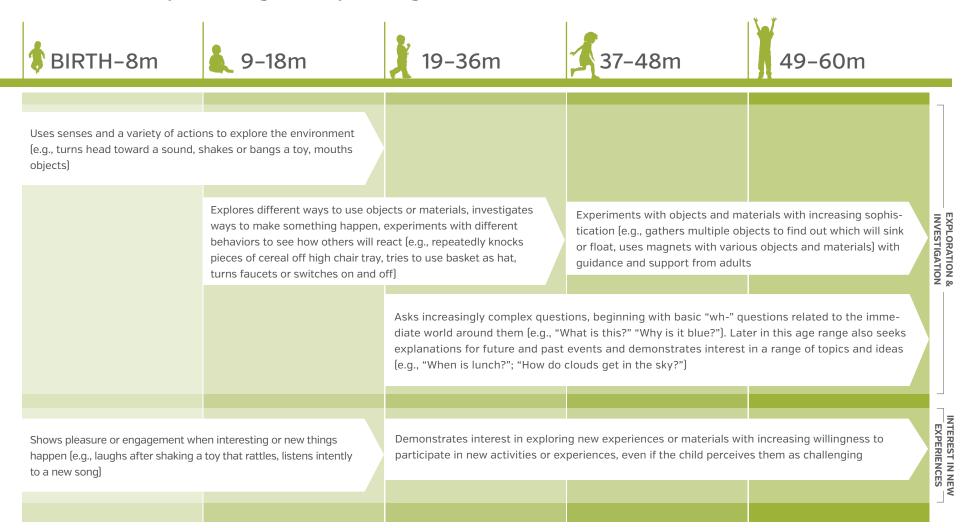
⁵Shonkoff, J. P., Garner, A. S., The Committee on Psychosocial Aspects of Child and Family Health, The Committee on Early Childhood, Adoption, and Dependent Care, & The Section on Developmental and Behavioral Pediatrics. [2011]. The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, 129, 232-246. doi: 10.1542/peds.2011-2663.

⁶Shonkoff, J. P., Garner, A. S., The Committee on Psychosocial Aspects of Child and Family Health, The Committee on Early Childhood, Adoption, and Dependent Care, & The Section on Developmental and Behavioral Pediatrics. [2011]. The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, 129, 232-246. doi: 10.1542/peds.2011-2663.

⁷Bialystok, E., Barac, R., Blaye, A., & Poulin-Dubois, D. (2010). Word mapping and executive functioning in young monolingual and bilingual children. *Journal of Cognition and Development*, 11, 485-508. doi: 10.1080/15248372.2010.516420

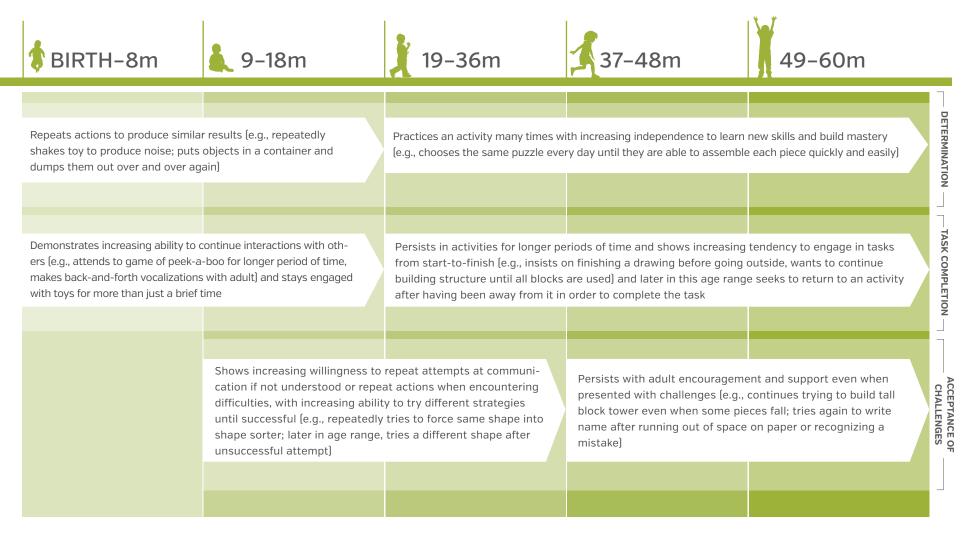
CD1. APPROACHES TO LEARNING

CD1.1 Shows curiosity and a willingness to try new things



CD1. APPROACHES TO LEARNING

CD1.2 Shows persistence in approaching tasks



CD2. EXECUTIVE FUNCTION

CD2.1 Focuses and sustains attention

\$BIRTH-8m	♣ 9–18m	19-36m	3 7-48m	49-60m
Orients to and focuses on sounds, in the environment (e.g., attends to head to follow caregiver with his of the sound in the sound in the environment (e.g., attends to head to follow caregiver with his of the sound in the soun	activities, people, and objects o sounds, lights, etc.; turns ir her gaze) to people and objects and join ends to a short, familiar story-	Maintains focus and attention for to ignore distractions and resume	clonger periods of time with increase task after interruptions* hile ignoring irrelevant information yellow bears in a group that include ackground noise on the playground. Shifts focus among various aspestory (e.g., recognizes two object the same color, then recognizes other object because it is the sate aspects of a story) Shows increasing ability to shift object, activity, person, etc. with (e.g., engages in a different activity unavailable; with support focused.	(selective attention) with es bears of other colors; carries of an object, activity, or ets are alike because they are that one of them is like aname shape; talks about specific attention away from a desired a adult support and coaching vity when preferred activity is
			separation from caregiver)	

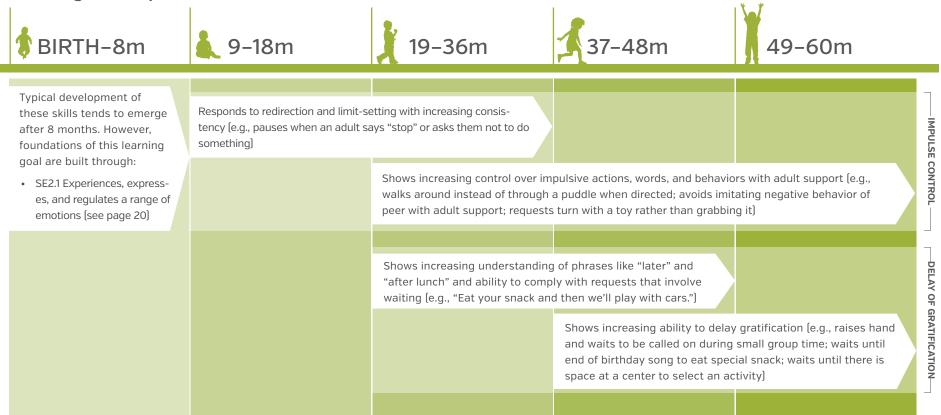
^{*}Children's engagement and attention span will vary from activity to activity, depending in large part on their level of interest in the experience or topic. Children will need more support maintaining focus during non-preferred activities, but over time develop greater capacity and motivation to cooperate and attend during less desirable tasks.

CD2.2 Shows flexibility in adjusting thinking and behavior to different contexts

37-48m BIRTH-8m 9-18m 19-36m Shows increasing ability to flexibly shift between roles or use props Uses familiar objects in new or unanticipated ways (e.g., drops or throws a rattle, uses an overturned pail as a drum, and later in this age range pretends a block is a phone) in multiple ways (e.g., pretends to be the dad and the pet dog, using different voices and actions for each character; uses a paper plate as a steering wheel and then later as a bus driver's hat) Transitions from one activity to the next (e.g., moving from center time to snack time) with increasing independence and ability to adjust to changes in routine when necessary with support and advance notice from adults ADJUSTING BEHAVIOR TO MATCH CONTEXT Applies different rules in different contexts with decreasing need for reminders (e.g., takes shoes off at home, but not at school; runs and uses "outside voice" when on playground, but uses "walking feet" and "inside voice" in classroom; if a dual language learner, speaks in home language or English based on whom they are talking to) Flexibly shifts between directions during an activity or game (e.g., usually performs actions at appropriate times during "Simon Says"; sorts objects by color and then by shape when prompted)

CD2. EXECUTIVE FUNCTION

CD2.3 Regulates impulses and behaviors



CD2. EXECUTIVE FUNCTION

CD2.4 Holds and manipulates information in memory





9-18m



19-36m



37-48m



49-60m

SHORT-TERM & WORKING MEMORY*

LONG-TERM MEMORY

Shows awareness that people and objects still exist when they are out of sight and sound range (object permanence; e.g., reaches under a blanket to retrieve a stuffed animal that an adult has hidden while child watches; when older, watches at the window after a family member leaves)

Searches for hidden or missing objects and notices when people are missing from a familiar group (e.g., when a peer is absent)

Shows increasing skill in memory games (e.g., recalls an increasing number of items removed from view in games like "What's Missing"; plays simple memory matching card games)

Remembers and communicates about recent events (e.g., what happened earlier in the day; what has just happened in a story being read)

Remembers and follows two-step directions (e.g., "Put all the crayons in the basket, then put the basket on the shelf"; "Touch your nose, then touch your ear") with decreasing need for adult support

Remembers and follows multi-step directions (e.g., "Push in your chair, throw away your trash, and then join us for circle time"; follows a sequence of actions for a song such as jumping, then clapping, then turning around) with decreasing need for adult support

Remembers and processes multiple pieces of information before responding (e.g., considers two or more options before making a choice; remembers response to teacher's question long enough to respond after waiting for peers to share their comments)

Anticipates familiar actions or routines (e.g., raises legs when diaper is changed; later in this age range, goes to table when it is time to eat)

Responds to familiar people and objects (e.g., shows excitement about a toy that was played with days earlier; later in this age range looks for or points to familiar people or objects when they are named)

Learns and recalls motor routines, songs, and rhymes over time with increasing accuracy (e.g., sings along with familiar song and performs accompanying actions)

Imitates actions or behaviors that were observed at an earlier time (e.g., uses traffic hand signals on trike track after seeing them demonstrated by a crossing guard; divides markers into "fair share" groups after observing teacher do this the day before)

Tells some details about stories or personal experiences with adult support and modeling

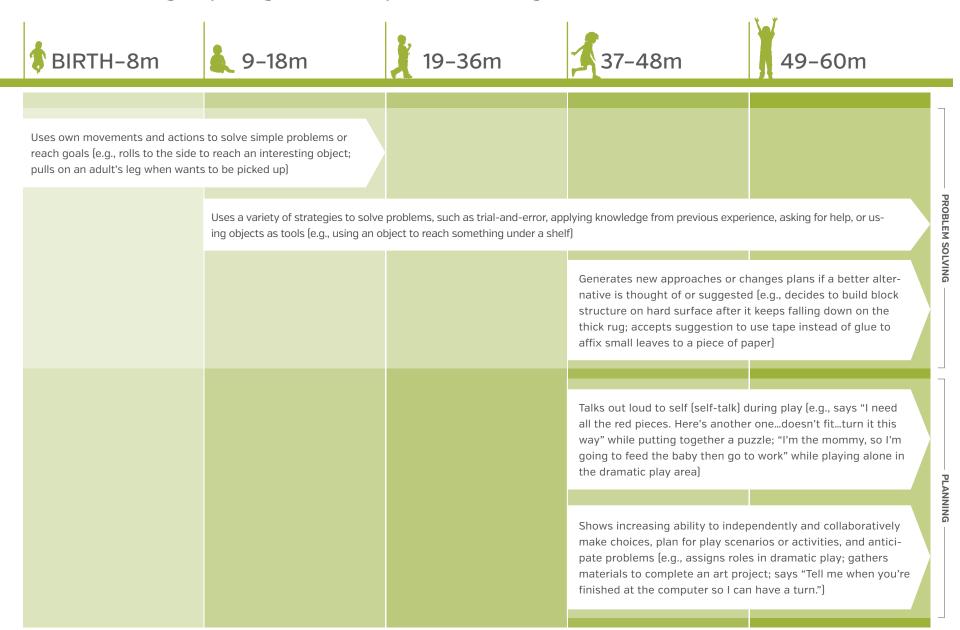
Remembers past experiences or familiar stories with increasing ability to independently and accurately recall details and retell events in sequence

*working memory = the capacity to hold and manipulate information in our heads over short periods of time

Cognitive Development

CD3. LOGIC AND REASONING

CD3.1 Uses reasoning and planning ahead to solve problems and reach goals



CD3. LOGIC AND REASONING

CD3.2 Engages in symbolic and abstract thinking



A child's mind and body develop together in an interrelated way.¹ From the time they are born, children use their bodies to learn, making physical development and health vitally important to all areas of child development and learning. Children begin exploring the world by using their hands and mouths immediately after birth. As they grow older, the ability to crawl and walk provides new possibilities for exploration and discovery. Although physical development will largely happen on its own, there are ways in which early childhood professionals can encourage physical growth and coordination to help children play confidently, engage in fun physical activities, and develop a strong foundation for a healthy, active lifestyle that carries into adulthood.

Today, there are a number of challenges to supporting a child's physical development and health. Children have easy access to screens (e.g., televisions, cell phones, tablets) and "fast foods" with limited nutritional value, and many low-income communities simply lack healthy food options (known as *food deserts*). Given this context, it is easy for children to eat unhealthy meals and be limited in their physical activity. This makes it even more important for early childhood professionals to support physical development and health by motivating children to stay active, challenging them to improve, and providing guidance in physical skills, nutrition, and how to stay healthy and safe. Physical activities, for example dancing, can be easy and fun (see Creativity and Aesthetics domain). Arkansas's early childhood professionals do not have to be athletic or a trained physical education teacher to encourage and teach physical development and health—they just need to be knowledgeable about how to promote development in this important area.

Areas of physical development and health

The Arkansas Child Development and Early Learning Standards focus on three areas of physical development and health:

 Gross motor captures a child's growing ability to move, walk, run, and climb, as well as a child's stability and balance and the ability to catch, throw, strike, and kick.

- Fine motor skills focus on the development of hand-eye coordination, the child's ability to manipulate objects with his or her hands and fingers, and the ability to use different tools (utensils, writing implements, etc.).
- Health and well-being outlines how a child communicates needs, demonstrates healthy eating habits and food choices, engages in safe behavior, participates in physical activity and exercise, and takes appropriate actions to meet needs.

Potential warning signs of physical developmental delay

Early childhood professionals play a key role in the early identification of physical development delays and health concerns. Although the standards have been developed with the understanding that children's physical development and health will vary, there are signs that might indicate a developmental delay or health issue. The Centers for Disease Control and Prevention² recommend talking with a medical or early childhood specialist if:

By 9 months, a child doesn't bear weight on legs with support, doesn't sit with help or doesn't transfer toys from one hand to the other.

By 18 months, a child can't walk or doesn't point to show things to others.

By 3 years old (36 months), a child falls down a lot or has trouble with stairs, drools or has very unclear speech, or loses skills he or she once had.

By 4 years old (48 months), a child can't jump in place; has trouble scribbling; resists dressing, sleeping, and using the toilet; or loses skills he or she once had.

By 5 years old (60 months), a child doesn't draw pictures, can't brush teeth, wash and dry hands, or get undressed without help, or loses skills he or she once had.

The indicators above may not include all of the signs of a delay in physical development or a potential health condition. Early childhood professionals and parents know the young children in their care best. If there is a suspicion of a physical development delay or health issue, it is important to consult a medical or early childhood specialist.

Sanders, S. & Courson, D. [2004]. Helping young children become physically active for life. Little Rock: Arkansas Department of Human Services Division of Child Care and Early Childhood Education Little Rock, Arkansas.

²Centers for Disease Control. [2009] Learn the signs: Act early, Atlanta, GA: Centers for Disease Control. Retrieved from: http://www.cdc.gov/ncbddd/actearly/pdf/checklists/all checklists.pdf

Special considerations

Children will reach the physical development indicators at different ages. Young children who live in poverty, lack stable relationships at home, live with drug- or alcohol-dependent caregivers, or who are exposed to other adverse conditions may face more challenges in engaging in physical activity and supporting their own nutrition and health. These children may require more intense positive interactions and learning opportunities to support their physical development and health.

In addition, children's cultural background may play a role in how they develop and meet physical development and health milestones. Children's development in certain areas is dependent on the exposure they have to certain activities and opportunities to practice certain skills. For example, girls in some cultures may not be exposed to riding a bike or other physical activities. Similarly, a child's demonstration of fine motor skills using utensils may depend on whether early self-help skills such as feeding oneself are expected and taught in their family and culture, and use of utensils may vary across cultures.

Children with physical disabilities should be included in physical activities, but may require alternate ways of meeting gross and fine motor indicators. These children may pedal an adaptive tricycle, navigate a wheelchair, or feed themselves with a specialized spoon. Children with cognitive disabilities may also meet the physical development and health goals in a different way, often at a different pace, with a different degree of accomplishment, and in a different order than typically developing children. When observing how children demonstrate what they know and can do, early childhood professionals must consider appropriate adaptations and modifications, as necessary.

A key consideration in promoting physical development is the safety of the children involved in physical activities. Wearing the appropriate safety equipment during a physical activity, not swinging an object when others are close, and providing adequate space to allow children the ability to move without bumping into others are key elements of safety when engaging in physical activity. Early childhood professional should consult Arkansas's minimum licensing requirements or the Head Start program performance standards for the appropriate health and safety regulations. In addition, children should participate in getting out and putting away equipment to build a sense of community around the participation in physical activities.

Physical Development and Health: Key Takeaways

- · Although physical development will largely happen on its own, there are ways in which early childhood professionals can encourage physical growth and coordination to help children play confidently, engage in fun physical activities, and develop a strong foundation for a healthy, active lifestyle that carries into adulthood.
- Early childhood professionals do not have to be athletic or trained in physical education to encourage and teach physical development and health-they just need to be knowledgeable about how to promote development in this important area.
- A key consideration in promoting physical development is the safety of the children involved in physical activities. Wearing the appropriate safety equipment during a physical activity, not swinging an object when others are close, or providing adequate space to allow children the ability to move without bumping into others are key safety elements when engaging in physical activity.

PH1. GROSS MOTOR

PH1.1 Demonstrates locomotor skills

\$BIRTH-8m	4 9–18m	19-36m	37-48m	49-60m
Lifts head and chest off firm surface such as floor when on tummy; rolls over	Shifts between lying down, sitting, and balancing on hands and knees			MOVEMENT
	Moves from crawling to cruising* to walking** showing increasing coordination for each skill	Changes speed or direction while moving (walking, running, using walker), though may have difficulty stopping with control	Moves with control, avoiding obs (e.g., moves through obstacle cor small spaces; stops at intended l	urse, steers wheelchair into
		Walks and runs with balance but arm may pump more) and has rel		i in
			Walks and runs smoothly with mopposition movements and narr	_
	Crawls up stairs on hands or knees, later in this age range walks up and down stairs hold- ing an adult's hand, stepping with both feet on each step	Walks up and down stairs or climbing equipment by step- ping with both feet on each step, with increasing ability to move without support from adult or handrail	Climbs up and down stairs or pla alternating feet and smooth, cod	
		Experiments with different ways of moving (e.g., walks on tiptoes, walks backwards, marches, uses walker, pushes or pedals riding toy with feet)	Shows increasing ability to coordir (e.g., galloping, sliding, hopping, ar smoothly and with ease	The second secon

^{*}cruising = taking sliding steps while holding onto something for support. Some children progress from sideways cruising (e.g., taking sideways steps while holding on to furniture) to frontward cruising [e.g., taking steps forward with hands held by an adult or with one hand on furniture] whereas other children may move from sideways cruising directly to independent walking.

^{**}There is large variability in meeting these milestones and some children may skip some milestones, revert to earlier ones, or display multiple milestones simultaneously. For example some children may never crawl and go straight to cruising or learn to crawl and cruise simultaneously.

PH1. GROSS MOTOR

PH1.2 Shows stability and balance

\$BIRTH-8m	🧘 9–18m	19-36m	3 7-48m	49-60m	
Sits independently with increasing positions (e.g., get into sitting posiing, reach for a toy without falling, from sitting)	tion from lying down or crawl- pull to a standing position Shows increased ability to mainta	in balance while in motion when motion abruptly (e.g., carries a toy			CORE
	of a chair, squats to pick up toys,	Coordinates increasingly complex upright while moving wheelchair	x movements while maintaining conforward, sits on and steers tricycle ox edge or while standing on one leads to the standing on the standing and independence	or other ride-on toy]	CORE STABILITY
			jumping for height (e.g., up and dovumps forward), with increasing abilit Hops and leaps with increasing slift forward on one foot without losin made from two ropes taking off withe other)	y to use two-footed takeoff kill and control (e.g., hops g balance, leaps over a "river"	JUMPING, HOPPING, & LEAPING
			the other)		

PH1. GROSS MOTOR

PH1.3 Demonstrates gross-motor manipulative skills

♦ BIRTH−8m	4 9–18m	19-36m	3 7-48m	49-60m
		Catches medium- to large-size ball ball against body with straight arm visually track objects in space		Catches balls or other objects of any size with both hands, with arms bent
Reaches for and drops objects, gra with two hands, pushes or rolls obj		Tosses or throws balls or other of increasing control of direction, ai		Tosses or throws balls or other objects with increased accuracy and force, stepping forward with the leg opposite the throwing arm and following through
		Strikes a stationary ball or other object with hand or arm (e.g., strikes a ball off of a table with hand), may not follow through or have accurate aim	Strikes a stationary ball or other objeshort-handled paddle) with increasing	
		Kicks with increased control and ra from kicking a stationary ball from running up to it		Kicks moving ball while running, tracking ball visually and using full leg swing with arms moving in opposition to the legs

PH2. FINE MOTOR

PH2.1 Demonstrates fine-motor strength, control, and coordination

♦ BIRTH−8m	♣ 9–18m	19-36m	3 7-48m	49-60m
Uses hand-eye coordination to r properties of objects	each for, touch, and explore	Uses hand-eye coordination to complete tasks (e.g., turning pages and pointing to pictures in books, turning knobs and unscrewing lids), though may lack precision in some actions (e.g., spills water when pouring)	Shows increasing refinement in h tracks words across page with fin support, pours without spilling, p	ger with adult modeling and
Grasps objects with increasing si task (e.g., uses index finger and to pieces of cereal, uses whole hand	thumb [pincer grasp] to pick up	Handles medium-size blocks, puzzle pieces, and manipulatives (e.g., works on three- to four-piece puzzles, puts together large connecting blocks or linking toys, strings large beads)	Handles smaller blocks, puzzle piec puzzles of up to 10 pieces, builds sti blocks, arranges small pegs in pegb	ructures using small Legos® or
		Manipulates a variety of fastener buttons, zippers, laces, and buck		Manipulates more complex fasteners (e.g., threads belt through loops on pants, attempts to tie shoes)

PH2. FINE MOTOR

PH2.2 Adjusts grasp and coordinates movements to use tools

\$BIRTH-8m	♣ 9–18m	19-36m	3 7-48m	49-60m
Typical development of these skills tends to emerge after 8 months. However, foundations of this learning goal are built through: • PH2.1 Demonstrates fine motor strength, control, and coordination (see	Scoops food with spoon with incre	Uses eating utensils with increasin with a butter knife*	g competence, including spearing for	
page 39)	Holds large writing and drawing chalk) to make spontaneous do from whole hand grip to approx (may still move whole arm to m	ts and scribbles, progressing imate thumb-and-finger grip	cutting to cut out simple shapes	d paper, to make a variety of osses, triangles), letter- and
			s for different purposes (e.g., digs witl os flour during food experiences) and dispenser	

^{*}Children may show variation in these skills based on whether early self-help skills are expected and taught in their family and culture and use of utensils may vary across cultures

PH3. HEALTH AND WELL-BEING

PH3.1 Demonstrates interest in engaging in healthy eating habits and making nutritious food choices

♦ BIRTH−8m	♣ 9–18m	19-36m	3 7-48m	49-60m
	ngry, thirsty, or has had enough to ea hen full, crying when hungry) and lat			COMMUNICATING
	Shows a willingness to taste new for to be offered several times) and ex	Engages in basic cooking tasks dur	ring food experiences or in dramatic p	
		spreading, sprinkling or mashing) Names an increasing variety of foo	s out for snack; cutting with a plastic ods, begins to ask questions about who ditems (e.g., calls an apple and a pe	nere food comes from, and
		garden, notices that carrots and po		nealthy and unhealthy foods; ng that eating a variety of e healthy, and makes choices
			about 100us, sometimes based 0	III whether the food is natritious

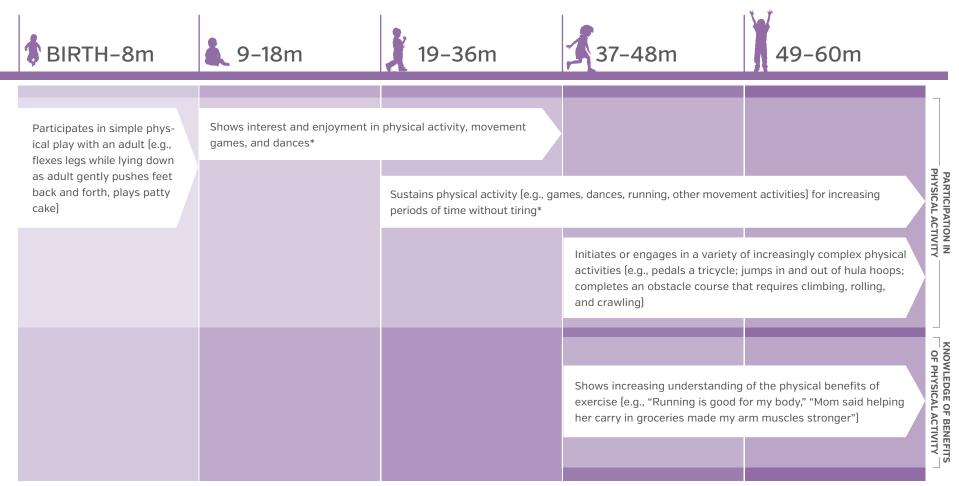
PH3. HEALTH AND WELL-BEING

PH3.2 Shows awareness of safe behavior

\$BIRTH-8m	4 9–18m	19-36m	37-48m	49-60m	
Uses sensory information and cur safety of environment (e.g., startl giver when approached by an unf of steep drop-offs when crawling	es at a loud noise, looks to care- familiar adult, shows awareness		Identifies, avoids, and alerts othe accepts adults' help in potentiall teacher to a broken fence part, coplay structure when needs assis	y unsafe situations (e.g., alerts alls for help from the top of the	AWARENESS OF SAFE BEHAVIOR AND SIGNALS OF DANGER
			another child to go down the slic		IOR
		Follows basic safety rules, practic guidance and support (e.g., holds when moving with group from indistance from the swings when reference from the swings when the swings when reference from the swings when the swings where we will be swings when the swings when the swings when the swing	on to rope with knots or loops doors to outdoors, keeps a safe	Demonstrates knowledge of and ability to follow safety rules and routines with increased independence (e.g., most of the time remembers to put on a helmet before riding a tricycle; lines up when fire alarm goes off and when class is outside says to a peer, "Now the teacher's going to call names to make sure we're all here.")	UNDERSTANDING OF SAFETY RULES AND PRACTICES

PH3. HEALTH AND WELL-BEING

PH3.3 Engages in a variety of developmentally appropriate physical activities



^{*} The National Association of Sport and Physical Education recommends that toddlers and preschoolers should engage in at least 60 minutes total (and up to several hours) of unstructured free play physical activity each day and should not be sedentary for more than 60 minutes at a time except when sleeping. In addition, preschoolers should engage in at least 60 minutes of structured play (physical activity in which an adult is providing activities, instruction, and feedback to help with skill development).

PH3. HEALTH AND WELL-BEING

PH3.4 Takes appropriate actions to meet basic needs*

\$BIRTH-8m	4 9–18m	19-36m	3 7-48m	49-60m	
Indicates needs and wants using vocalizations, and later words (e points to food when wanting moor hugged)	.g., cries when tired; signs or		ecificity and detail to get needs met (") and later may communicate about nake me sick")		COMMUNICAT
					ING
Anticipates and cooperates during mouth when food is offered, raises					
Participates in personal hygiene adult assistance (e.g., holds hand adult to turn it on, holds toothbr sits on toilet with help, pulls off or		ds under faucet and waits for rush with adult while brushing,		, handwashing, toothbrushing,	71777111771
			for personal self-care routines (e.g. ng) with some support from adults	ກຸ handwashing, toothbrushing,	וֹ ז ז ז ז ז ז ז ז ז ז ז ז ז ז ז ז ז ז ז
			Demonstrates increasing under why personal care routines are after handling classroom pet when the many that so I don't get sur	standing of how, when, and completed (e.g., washes hands nen reminded by teacher; says	,
			vs nose, throws away tissue, and was ands, uses drinking fountain without t guidance, and modeling	ъ	HEALTH

^{*}Children may show variation in these skills based on whether early self-help skills are expected and taught in their family and culture

Early childhood researchers refer to young children

as linguistic geniuses. From a very young age children have the capacity to learn language. Research shows that children are processing the sounds of language even before they are born and engage in an immense amount of language learning long before they learn to speak.² Children's language learning is largely driven by the language environment to which they are exposed. For example, at birth children can discriminate the sounds of any language, but this ability quickly becomes specific to the language or languages to which they are most exposed.3 Furthermore, a child's "language nutrition"-the quantity and quality of language children experience-is as critical to a young child's brain development as healthy food is to physical growth. Unfortunately, too many children are "linguistically malnourished." For example, by age 3, children from lower income homes hear an estimated 30 million fewer words than their peers in higher income homes. Children also experience disparities in the quality of language exposure, in terms of the richness and variety of vocabulary words they hear, the types of questions that are asked of them that encourage thinking skills, and encouraging versus discouraging conversations ["What does that feel like?" versus "Don't touch that," for example).4 However, research shows that high-quality, language-rich interactions in early childhood classrooms can have a profound impact on children's language abilities, and that these effects can overcome the word gap. Language is essential to all areas of development and learning.⁵ It is important to social interaction, with skilled communicators more likely to demonstrate social competence, and is a key foundational component of a child's emergent literacy skills.

Areas of language development in the standards

The Arkansas Child Development and Early Learning Standards focus on three areas of language development for all children:

- Receptive language describes children's ability to understand and respond to language (in the child's home language). This includes their understanding of an increasingly large vocabulary of words and their ability to comprehend and follow directions.
- Expressive language refers to a child's speaking vocabulary, grammar and sentence structure, and clarity of communication.
- Communication skills outline a child's ability to hold conversations and understand the social rules of language. Even young babies engage in "conversations" by making sounds or faces back-and-forth with adults.

For children from families who speak a language other than English at home, the standards also include indicators for English Language Development. These standards focus on the development of a child's expressive, receptive, and communication skills in English as well as the development of receptive and expressive language **in the child's home language**. Since English language development depends on when a child is exposed to English and not the child's age, the indicators do not include age ranges. One 4-year-old child could have started learning English at the age of 1 while another may have just started, making age thresholds inappropriate. Instead, the developmental progressions capture "early stage," "mid-stage," and "late-stage" English language development regardless of age. It is also important to note that there is no set time for how long it will take a child to progress through these stages. Progress depends upon the unique characteristics of the child, his or her exposure to English, and other factors.

Potential warning signs of developmental delay

Early childhood professionals play a key role in the early identification of delays in language development. Although the standards have been developed with the understanding that children's language development will vary widely, there are signs that might indicate a developmental delay or behavioral issue. The Centers

'Kuhl, P. (2010) "The linguistic genius of babies." Ted talk. Retrieved from: https://www.ted.com/talks/patricia_kuhl_the_linguistic_genius_of_babies?language=en

2Moon, C., Lagercrantz, H., & Kuhl, P. K. (2013). Language experienced in utero affects vowel perception after birth: A two-country study. Acta Paediatrica, 102(2), 156 - 160.

³Kuhl, P. K. (2010). Brain mechanisms in early language acquisition. *Neuron*, 67(5), 713-727.

⁴Hart, B. & Risley, T. R. (1995). Meaningful differences in the everyday experiences of young American children. Baltimore, MD: Brookes Publishing.

⁵Dickinson, D. K., & Porche, M. V. (2011). Relation between language experiences in preschool classrooms and children's kindergarten and fourth-grade language and reading abilities. *Child Development*, 82, 870–886.

🛘 🖿 🖿 🖿 Language Development

for Disease Control and Prevention⁶ recommend talking with a medical or early childhood specialist if:

By 9 months, a child doesn't babble ("mama," "baba," "dada") or doesn't respond to own name.

By 18 months, a child doesn't gain new words or doesn't have at least 6 words.

By 3 years old (36 months), a child doesn't speak in sentences or doesn't understand simple instructions.

By 4 years old (48 months), a child doesn't follow 3-part commands, doesn't understand "same" and "different," doesn't use "me" and "you" correctly, or doesn't speak clearly.

By 5 years old (60 months), a child can't give his first and last name, doesn't use plurals or past tense properly, or doesn't talk about daily activities or experiences.

The indicators above may not include all of the signs of a language delay. Early childhood professionals and parents know the young children in their care best. If there is a suspicion of a language delay, it is important to consult a medical or early childhood specialist.

Special considerations

Children will reach the language development indicators at different ages. Young children who live in poverty, lack stable relationships at home, live with drug- or alcohol-dependent caregivers, or who are exposed to other adverse conditions may progress more slowly and exhibit disparities in language development compared to their peers. These children may require more intense positive interactions and learning opportunities to support their language development.

Language learning is a key component of early development for all children. However, as the term *dual language learners* implies, some children are learning to speak their home language at the same time as they are learning a second language, such as English. For children from families who speak a language other than English at home, research indicates that the development of a child's home language supports English language development. As such, it is important that early childhood professionals support and understand the progression of the child's home language even if they don't speak the language themselves. Early childhood professionals should attempt to obtain information about home language development from parents and caregivers through a qualified interpreter and encourage them to create language-rich environments at home. Early childhood programs can also support a child's home language by utilizing teaching assistants, volunteers, or other members of the community who may speak the child's home language to provide experiences in the early learning setting by reading books, telling stories, and singing songs in the child's home language.

Finally, language development may look different among children with disabilities. Children who are hearing-impaired may use gestures, symbols, pictures, or require extra support to communicate. Children with developmental delays may meet the language indicators at a different pace, and potentially in a different order than typically developing children. Children may meet indicators using sign language or assistive or adaptive technology.

Language Development: Key Takeaways

- Children are processing the sounds of language even before they are born and engage in an immense amount of language learning far before they learn to speak.
- For children who are dual language learners, the standards focus on the development
 of English as well as the development of a child's home language. The standards chart
 "early stage," "mid-stage," and "late-stage" English language development regardless
 of age.
- The development of a child's home language supports English language development. Early childhood professionals should to the best of their abilities support and understand the progression of the child's home language even if they don't speak the language themselves.

⁶Centers for Disease Control. [2009] *Learn the signs: Act early.* Atlanta, GA: Centers for Disease Control. Retrieved from: http://www.cdc.gov/ncbddd/actearly/pdf/checklists/all checklists.pdf ⁷Lindsey, K. A., Manis, F. R., & Bailey, C. E. [2003]. Prediction of first-grade reading in Spanish-speaking English-language learners. *Journal of Educational Psychology*, 95[3], 482–494.

⁸Roberts, T. A. [2008]. Home storybook reading in primary or second language with preschool children: Evidence of equal effectiveness for second-language vocabulary acquisition. *Reading Research Quarterly*, 43(2), 103–130.

LD1. RECEPTIVE LANGUAGE

LD1.1 Understands and responds to language (in child's home language)*

37-48m 19-36m BIRTH-8m 49-60m 9-18m Attends to familiar objects or people that have been named and Understands an increasing number of words for objects (nouns), Responds to noises and understands the meaning of an increasing number of simple actions (verbs), and characteristics (adjectives) encountered in voices in the environment VOCABULARY & LANGUAGE COMPREHENSION words, especially objects encountered in everyday life real and symbolic contexts* (e.g., when playing "doctor" brings (e.g., startles or cries at unexpected sounds; smiles another child a stethoscope when he or she asks for it) or coos when "parentese*" is used) Identifies (e.g., points to) Responds to increasingly complex "Who," "What," "Why," and people, animals, and objects "Where" questions when prompted (e.g., points Shows excitement at familiar to a cow in a book when words such as "mommy," "botadult asks "Where's the tle," or "bebé" (baby in Spanish) cow?"] Follows one- or two-step directions that involve familiar experiences **FOLLOWS DIRECTIONS** Engages in reciprocal face-Follows simple one- or twoor objects (e.g., "Pick up the ball and roll it to me," or "Dame la mano" to-face interactions and word requests like "Wave ["Give me your hand" in Spanish for dual language learners]] responds to adults through bye-bye" with decreasing gestures, looking in a specific need for adult gestures Follows increasingly more detailed, multi-step directions (e.g., direction, or vocalizations "Please put away your markers, put your picture in your cubby, and join us on the carpet")

^{*}A child's home language can include any language that the child is primarily exposed to at home, including languages such as Spanish, Marshallese, American Sign Language, etc.

^{*}Parentese = Commonly referred to as a "baby talk," and sometimes referred to as "motherese," it is a form of speaking used by adults in most cultures when speaking with very young children. When adults speak in parentese, they use real words but at a higher pitch, elongating words, and using longer pauses between words (e.g., "Wheeeeeere's baby? Heeeere you are!")

^{*}Symbolic context = environments other than the one that the child experiences in everyday life including those that are in books and created during dramatic play

LD2. EXPRESSIVE LANGUAGE

LD2.1 Uses increasingly complex vocabulary, grammar, and sentence structure (in child's home language)*

\$BIRTH-8m	4 9–18m	19-36m	3 7-48m 49-60m
Experiments with making sounds (e.g., babbling), often repeating consonant sounds (e.g., da da and ba ba)	Begins to say a number of simple words (e.g., "nana," "go," "hi," and "leche" [milk in Spanish for dual language learners]]	Begins to use two- and three- syllable words and names spe- cific people, animals, and toys	Uses increasingly complex and varied vocabulary words to express needs and describe objects, relationships between objects, emotions, and actions
	May combine two words to express a want or interest (e.g. says "go side" when wanting to go outside)	Begins to use plurals, past tense, subject-verb agreement, and the possessive form* although often incorrectly (e.g., "Mommy goed work") Increasingly combines simple words into sentence-like structures (e.g., "Me milk please") and when older, sentences (e.g., "Let's go to Grammy's house!" or "Léeme un cuento"	Tells increasingly detailed stories about other times and places, with increasing accuracy in use of past and future tenses Uses increasingly longer (i.e., at least four to six word sentences) that are increasingly complex (i.e., combining two or three phrases* in a sentence) GRAMMAR &
Uses vocalizations (e.g., cooing) and gestures to communicate needs, interests, and emotions	Uses a small number of real and made-up words that can be understood by fa- miliar adults who speak the same language	["Read me a story" in Spanish for dual language learners]] Speaks or signs clearly enough most of the time that unfamiliar adults who speak the same language can understand; still mispronounces many words [e.g., says "buhsghetti" for spaghetti]	Communicates clearly enough to be understood by most people and will usually only mispronounce new and/or unusual words CLARITY OF

^{*}A child's home language can include any language that the child is primarily exposed to at home, including languages such as Spanish, Marshallese, American Sign Language, etc.

^{*}Possessive form = words that are used for showing possession like "mine," "yours," "hers," and "theirs."

^{*}Phrase = a group of words that do not express a complete thought (e.g., 'the car' and 'is going fast' are both phrases in the sentence 'The car is going fast')

LD3. COMMUNICATION SKILLS

LD3.1 Communicates using social and conversational rules

	\$BIRTH-8m	4 9–18m	19-36m	3 7-48m	49-60m
expres sound taking		Initiates interaction or "conversation" with adults by pointing at objects, speaking or signing a word, sharing a toy, or calling attention to an object or person	Engages in brief back-and- forth conversations, often repeating or imitating words, tone, and actions of adults	Engages in back-and-forth converse (two to five conversational exchange to extend conversations by asking related to the topic, and later in this variety of conversational topics	ges**], with increasing ability questions, making comments
	Uses eye contact, facial expressions, gestures, and sounds to engage in turntaking "conversations" with adults	Shows joint attention* by shifting gaze to where an adult is looking or gesturing (e.g., looks at an object an adult is pointing to and looking at) and when older, initiates bids for joint attention (e.g., holds up a toy and looks at it, looks at adult for eye contact, then returns gaze to toy)	Begins to use polite forms of communication by saying "please," "thank you," and "excuse me" with modeling	With support and reminders, use with increasing consistency and familiar and unfamiliar settings	

^{*}Joint attention = the shared focus on an object by two individuals

^{**}Conversational exchanges = Each exchange is a "turn" taken by someone participating in a conversation. Here is an example of a conversation with five conversational turns: [1] Child: "Look at the castle I made!" [2] Teacher: That's a big castle! Who lives there? [3] Child: Only cats. One hundred cats live in the castle. [4] Teacher: One hundred cats. I wonder what they all eat. [5] Child: There's a cook that makes them fish and chicken cookies every day.

^{***}Social rules of language = making eye contact while speaking, taking turns in conversation, keeping an appropriate distance from the conversational partner, speaking with appropriate voice volume for the context, etc. It should be noted that conversational rules can vary by culture. For example, in some cultures, it is not appropriate to make eye contact during conversation. Cultural norms regarding volume of speech and physical proximity and contact between conversational partners may also vary.

LD4. ENGLISH LANGUAGE DEVELOPMENT

LD4.1 Demonstrates progress in attending to, understanding, and responding to English

EADIV	CTACE	ENICH ICH I	ANCHACE	DEVELOPMEN	IT*

MID-STAGE ENGLISH LANGUAGE DEVELOPMENT

LATE-STAGE ENGLISH LANGUAGE DEVELOPMENT

Responds to simple, commonly used words and phrases when accompanied by gestures and other supports

Pays attention to and observes other children and adults as English is spoken

Attends to English in small- and large-group activities, such as circle time, storybook reading, etc.

Imitates behaviors of other children to get the same result (e.g. sees child make the sign for "me too" in sign language and makes the same sign)

Responds to words, phrases, and directions in English when they are not accompanied by gestures or other visual aids

Demonstrates an understanding of English words related to basic concepts (e.g., colors, some animal classifications, foods, etc.)

Responds appropriately to requests in English that involve one-step directions (e.g., "clean up") when personally directed by others (these requests may occur with or without contextual cues)

Demonstrates an understanding of a larger set of words in English (for objects and actions, personal pronouns, and possessives) in both real and pretend activities

Demonstrates an understanding of words in English related to more advanced concepts (e.g., abstract emotions and ideas)

Follows directions that involve a one- or two-step sequence, relying less on contextual cues

Continues to make developmentally appropriate progress in receptive language skills in home language, including increasing ability to comprehend and respond to directions in home language

*Unlike the other developmental progressions outlined for other learning goals, English Language Development is not dependent on a child's age, but on a child's exposure to English. For example, a four-year-old who has recently immigrated to the United State is likely to have less command of the English language than a three-year-old who immigrated when he or she was one. As such, the progression of English Language Development is defined by stages of development rather than by what should occur within a certain age range.

LD4. ENGLISH LANGUAGE DEVELOPMENT

LD4.2 Demonstrates progress in speaking and expressing self in English

EARLY-STAGE ENGLISH LANGUAGE DEVELOPMENT	MID-STAGE ENGLISH LANGUAGE DEVELOPMENT	LATE-STAGE ENGLISH LANGUAGE DEVELOPMENT				
Relies on nonverbal communication, such as gestures or behaviors, to seek attention, request	Combines nonverbal with some verbal communication to be understood by others	Demonstrates increasing reliance on verbal communication in English to be understood by others while				
objects, or initiate a response from others	Engages in codeswitching* during conversations	still making some mistakes				
Repeats sounds and words in English	Uses telegraphic speech**	Uses new English vocabulary to share knowledge of concepts, including conversational and academic				
	Uses formulaic speech (expressions that are learned whole, e.g., "I don't know")	vocabulary Sustains a conversation in English with increasingly				
	Uses English vocabulary that mainly consists of concrete nouns and some verbs and pronouns	complex syntax, adding conjunctions, adjectives, adverbs, subject-verb-object patterns, and other more advanced elements of English sentence construction				
	Converses with others in English using two or three words at a time but switches back and forth between English and their home language	Sustains a conversation in English with increasingly complex syntax, adding conjunctions, adjectives, adverbs, subject-verb-object patterns, and other more advanced elements of English sentence construction Expands use of different forms of grammar in English (e.g., plurals; possessive pronouns; simple past-tense verbs), sometimes with errors				
	Uses some English grammatical markers (e.g., "-ing" or the plural-forming "-s") and applies at times the rules of grammar of the home language to English	Uses "what," "why," "how," "when," and "where" questions in more complete forms in English, sometimes with mistakes				
	Uses "what" and "why" questions in English, sometimes with errors					
Uses age-appropriate vocabulary and grammar in the ho	me language					
	DEVELOPMENT					
Listens to and converses in age appropriate way in home	OPME					
Asks a variety of age-appropriate questions (e.g., "what," "why," "how," "when," and "where") in home language						

^{*} Codeswitching = the act of switching back and forth between English and the child's home language. Children often insert a home language word into an English sentence to get the point across when they don't know the word in English.

^{**}Telegraphic speech = two-word phrases rather than full sentences, such as "want food"

🛘 🖿 🖿 🖿 Emergent Literacy

The most important predictor of high school graduation is a child's ability to read by the third grade. Yet, by age 3, there are already dramatic differences in the development of emergent literacy skills between children from low- and higher-income families. It is very difficult for a child who starts behind to catch up after entering school. These facts make achieving the goal of reading by the third grade more challenging for children from low-income families.

Emergent literacy is important for future development and learning. Emergent literacy skills are the foundation for later reading and writing, which support all academic progress in school. Early childhood professionals in Arkansas must use the years before a child enters school to build the foundation for literacy in a developmentally appropriate way. Developing this foundation begins at birth with later emergent literacy skills building on skills acquired in the very earliest years of life.

Areas of emergent literacy development in the standards

The Arkansas Child Development and Early Learning Standards focus on three areas of emergent literacy:

- Engagement in literacy experiences and understanding of stories and books outlines a child's growing level of engagement and interest with books and literacy experiences, as well as the child's ability to comprehend information from stories and books.
- **Phonological awareness** focuses on the ways in which children explore, play and manipulate the sounds of language.
- Knowledge and use of books, print, and letters charts the development of a child's understand of letters, letter sounds, print concepts and book features, as well as early writing skills.

Potential warning signs of reading difficulties or delay

Early childhood professionals play a key role in the early identification of delays in emergent literacy. Although the standards have been developed with the understanding that children's development and learning vary widely, there are signs to watch for that might indicate a developmental delay or future reading difficulties. The Centers for Disease Control and Prevention³ recommend talking with a medical or early childhood specialist if:

By 9 months, a child doesn't babble ("mama," "baba," "dada"), doesn't play any games involving back-and-forth interaction, doesn't respond to own name or doesn't look where you point.

By 18 months, a child doesn't gain new words or doesn't have at least 6 words.

By 3 years old (36 months), a child drools, has very unclear speech, doesn't speak in sentences, or doesn't understand simple instructions.

By 4 years old (48 months), a child has trouble scribbling, can't retell a favorite story, doesn't follow 3-part commands, doesn't understand "same" and "different" or "he" and "she", doesn't use "me" and "you" correctly, or speaks unclearly.

By 5 years old (60 months), a child can't give his or her first and last name, doesn't use plurals or past tense properly, or doesn't talk about daily activities or experiences.

The indicators above may not include all of the signs of a delay in emergent literacy. Other signs that may indicate the risk of future reading difficulties in school include:

• For older preschool children (4–5 years old), difficulty with rhyming games, learning the alphabet, associating the appropriate sounds with letters, or delayed or impaired speech.

'The Annie E. Casey Foundation. [2012]. Double jeopardy: How third-grade reading skills and poverty influence school graduation. Baltimore, MD Retrieved from http://www.aecf.org/m/resourcedoc/AECF-DoubleJeopardy-2012-Full.pdf.

²See, for example, National Early Literacy Panel. (2008). *Developing early literacy; Report of the national early literacy panel*. Washington DC: National Institute for Literacy and National Center on Family Literacy.

³Centers for Disease Control. (2009) Learn the signs: Act early. Atlanta, GA: Centers for Disease Control. Retrieved from: http://www.cdc.gov/ncbddd/actearly/pdf/checklists/all checklists.pdf

🛘 🖿 📟 📟 Emergent Literacy

- For children 5-years-old, not recognizing letters of the alphabet; or
- · For all children, being from families who have a history of learning disabilities with speech, language, spelling, or reading.4

Early childhood professionals and parents know the children in their care best. If there is a suspicion of a developmental delay or risk of future reading difficulties, it is important to consult a medical or early childhood specialist.

Special considerations

Typically, children will reach the emergent literacy indicators at different ages. However, the development of children's emergent literacy skills depends on their exposure to and engagement in literacy learning opportunities both at home and in early learning settings. There is great variability in children's exposure to early literacy learning opportunities based on socioeconomic and cultural differences that contribute to differences in children's understanding and use of literacy skills even by age 3. For example, reading aloud appears to be one of the most important experiences for building children's emergent literacy skills. However, children from middle-class families are typically read to for about 1,000 hours before beginning kindergarten whereas children from families who live in poverty are read to for only about 25 hours. 5 Additionally, a family's beliefs about literacy and schooling may affect children's exposure to literacy experiences at home. For instance, within some cultures many parents believe that literacy is something that develops from formal schooling after age 5. These parents often

do not see themselves as teachers of literacy or think it not necessary to read aloud to children under age 3.6 Understanding different cultural models of literacy may be especially helpful for early childhood professionals as they work to create home-school partnerships.

Early childhood professionals must ensure that young children with disabilities can fully participate in early literacy learning activities. Children with disabilities may require adaptations both to engage in early literacy activities and to demonstrate their emergent literacy skills.

Emergent Literacy: Key Takeaways

- By the time children turn 3, there are already dramatic differences in the development of emergent literacy skills, making the goal of reading by third grade more challenging for some children than others.
- · Developing the foundation of emergent literacy begins at birth with later emergent literacy skills building on skills acquired in the very earliest years of life.
- · Children from socioeconomically and culturally diverse families have different levels of exposure to literacy experiences at home. It is important for Arkansas's early childhood professionals to understand different cultural models of literacy and create home-school partnerships that support the development of emergent literacy skills in the home.

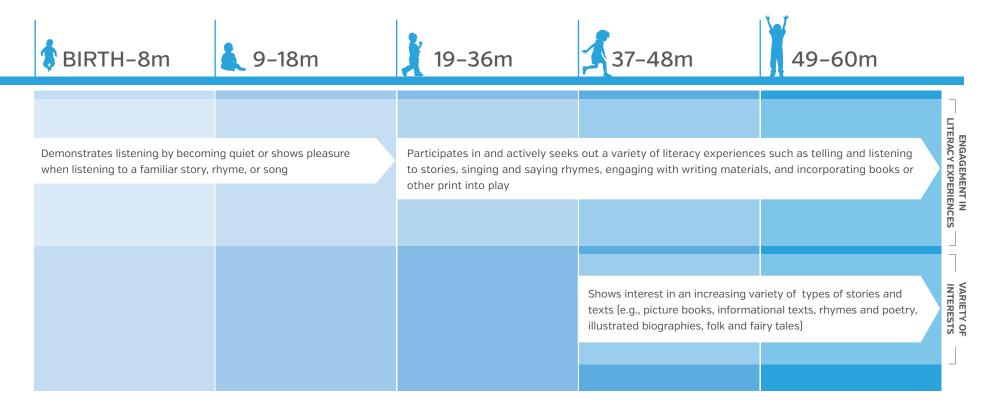
⁴Shaywitz, S.E. (1998). "Dyslexia". New England Journal of Medicinne, 98(338), 307-12.

⁵Berk, L. E. (2006). Looking at kindergarten children. In D. F. Gullo (Ed.), K today: Teaching and learning in the kindergarten year (pp. 11–25). Washington, DC: National Association for the Education of Young Children.

⁶Reese, L., & Gallimore, R. (2000). "Immigrant Latinos' cultural model of literacy development: An evolving perspective on home-school discontinuities." American Journal of Education, 108[2], 103-134.

EL1. ENGAGEMENT IN LITERACY EXPERIENCES AND UNDERSTANDING OF STORIES AND BOOKS

EL1.1 Shows interest in literacy experiences



EL1. ENGAGEMENT IN LITERACY EXPERIENCES AND UNDERSTANDING OF STORIES AND BOOKS

EL1.2 Engages in read-alouds and conversations about books and stories

\$BIRTH-8m	4 9–18m	19-36m	3 7-48m	49-60m
Attends to caregiver's voice when being held and read to	Actively participates in book reading pictures, turning pages, and making			ENGAGEMENT WITH BOOKS AND STORIES
		Shows comprehension by making conquestions, and responding to prompt	= = = = = = = = = = = = = = = = = = = =	With modeling and support, discusses predictions, cause-and-effect relationships, story-related problems and resolutions, and connections to other books and own experiences
		as cues Retells stories (e.g., favorite book	is happening and using some language, personal experience) with increasing ents in their narratives such as main elationships	TORY STRUCT
			Demonstrates knowledge from in of ways and makes connections periences (e.g., when teacher rea says, "We learned in that other b night and sleep during the day.")	to other books or personal ex- ads the story Owl Moon, child book that owls stay awake at

Informational text = type of non-fiction that uses both text and illustrations to convey meaning about the natural and social world, provide facts, and explain processes. Illustrations in these texts are realistic and can include photographs, diagrams, charts, graphs, labels and captions.

EL2. PHONOLOGICAL AWARENESS

EL2.1 Notices and manipulates the sounds of language

\$BIRTH-8m	4 9–18m	19-36m	3 7-48m	49-60m
Shows increasing awareness of an language by focusing on the speak				OF SOUNDS OF LANGUAGE
Experiments with the sounds of lar	nguage			IDS AGE
	Joins in and repeats songs, fingerpl alliterative phrases (words with sar			R
		Fills in the missing rhyming word of can generate rhyming words sponta		Decides whether two words rhyme
			Shows awareness that some words "Sam and Selena start with the sar	- J
			Shows awareness of separate word	ds in sentences
				Verbally identifies, blends, segments, and deletes parts of words (manipulating units of language)* with decreasing need for modeling or visual supports

^{*}Children learn to manipulate units of language (e.g., words within compound words, syllables) in different ways, progressing from easier to more difficult manipulation tasks (in an overlapping sequence rather than by mastering one level before the next):

Identifying = e.g., counts or claps syllables in classmates' names

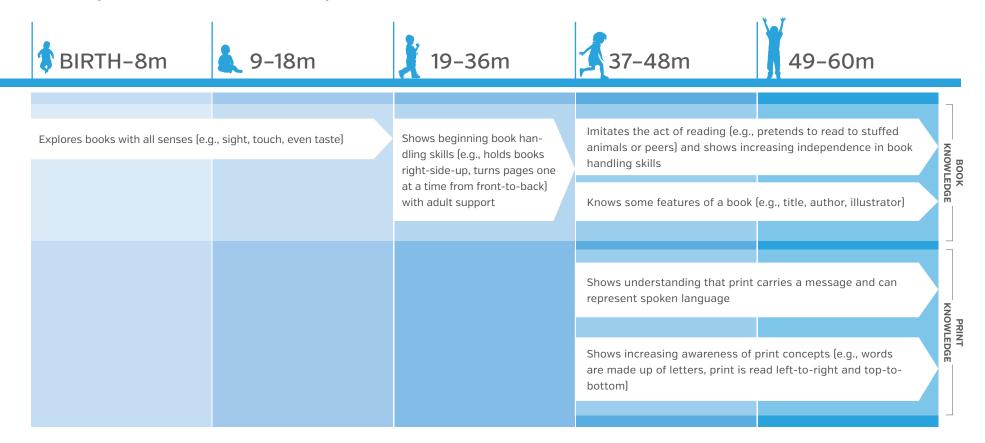
Blending = e.g., says lavaplatos (dishwasher in Spanish) when asked what word you get when you put lava (wash) and platos (dishes) together; puts together com-pu-ter and says computer

Segmenting = e.g., finds pictures of a cama [bed in Spanish] and a león (lion in Spanish) when asked what two words make camaleon (chameleon in Spanish); says pen- and -cil when asked to take apart the word pencil

Deleting = e.g., points to picture of a cup when asked "What's cupcake without cake?"; says no when asked, "What's mono [monkey in Spanish] without mo-?"

EL3. KNOWLEDGE AND USE OF BOOKS, PRINT, AND LETTERS

EL3.1 Responds to features of books and print



EL3. KNOWLEDGE AND USE OF BOOKS, PRINT, AND LETTERS

EL3.2 Shows knowledge of the shapes, names, and sounds of letters

\$BIRTH-8m	4 9–18m	,	19-36m	3 7-48m		49-60m
Typical development of these skills months. However, foundations of the through: • EL1.1 Shows interest in literacy et a EL2.1 Notices and manipulates to (see page 56) • EL3.1 Responds to features of box	his learning goal are built experiences (see page 54) the sounds of language		Shows interest in letters by singing with alphabet blocks, looking at alphabet blocks, looking at alphabet sto and recognizes simple en nizes stop sign or Walmart® or Lego® letters)	vironmental print (e.g., recog- logos, although may not say Recognizes and names an inc especially those in own name	ė	sing number of letters correctly, In increasing number of letters Shows understanding that a string of letters represents a sequence of spoken sounds (e.g., when writing asks "How do you spell fish?"

^{*}When learning letter names, children tend to learn uppercase letters before lowercase. When they learn lowercase, they most quickly learn names of letters they already know in the uppercase. Children also learn the letters in their own name more quickly than other letters.

Children have an easier time learning the sounds for letters when the letter name provides a "clue" to the sound. For example, learning that the letter B ("bee") makes the sound /b/ is easier than learning that F ("eff") makes the sound /f/. Children also have more difficulty with letter-sound connections for letters that represent more than one sound (e.g., the letter C can make the /s/ sound as in city as well as the /k/ sound as in cat.

EL3. KNOWLEDGE AND USE OF BOOKS, PRINT, AND LETTERS

EL3.3 Demonstrates emergent writing skills

♦ BIRTH-8m	4 9–18m	19-36m	3 7-48m	49-60m	
Typical development of these skills tends to emerge after 8 months. However, foundations of this leave in a second area.	Explores writing tools and movem with increasing control	ents, making scribble marks			PRE-WRITING EXPLORATION
tions of this learning goal are built through: • EL1.1 Shows interest in literacy experiences (see page 54)		Shows increasing understanding shapes, or letters to represent w	that writing carries a message and ords or ideas	uses scribbles, letter-like	
EL2.1 Notices and ma- nipulates the sounds of language (see page 56)			Produces strings of letters and/or unconventional order); begins to spaces	· · · · · · · · · · · · · · · · · · ·	LETTER AND PRINT WRITING CONCEPTS
 EL3.1 Responds to features of books and print (see page 57) 			Writes an increasing number of le	tters correctly, especially those	PTS
PH2.1 Demonstrates fine motor strength, control, and coordination (see page 39)				Writes first name with or without mistakes*	EARLY
				Uses early invented spell- ing (writes initial and/or final sounds to represent whole word; e.g., writes MK for milk)*	EARLY WORD WRITING —

^{*} May still include letter-like forms, write letters backward, exclude letters or switch their order, and/or may not always write left to right

Young children love to think mathematically. They enjoy building block towers, comparing quantities, and creating patterns. Children have an inherent interest in mathematics and can learn mathematical concepts at a very young age. The years before a child enters school are called the "years of promise" for mathematics because they are particularly important for mathematics development. Children who demonstrate strong prekindergarten math skills are more advanced in mathematics achievement in 10th grade. Furthermore, the complexity of children's block play in preschool has been linked to future success in junior high and high school, predicting the number of mathematics courses taken, the number of honors classes taken, the grades received in mathematics, and mathematics achievement scores. Children's mathematical abilities as they enter kindergarten predict their mathematics achievement throughout school and are even related to later reading achievement.

A child's capacity for learning and understanding mathematical content is often underestimated.^{5,6} Research suggests that children are in fact capable of more mathematics learning than is typically encouraged in early education settings.⁷ Beginning at birth, children use their everyday experiences to construct a variety of fundamental mathematical concepts and strategies. Children even as young as 3-months have an informal understanding of quantity.⁸ By the time children are between 2 and 3 years of age, they are beginning to solve non-verbal calcu-

lations, and by age 3 or 4, children demonstrate many skills such as enumeration, number relations, counting, and informal addition and subtraction.⁹

All of Arkansas's early childhood professionals, whether or not they feel skilled in math, can be great teachers of early mathematical concepts. A term like *algebraic thinking* in early childhood simply means that a child can recognize patterns and sort objects—two important foundational skills that prepare children for more advanced concepts. Early childhood professionals can introduce mathematical concepts, methods, and language through a range of developmentally appropriate experiences and teaching strategies. Counting with children, using comparison vocabulary (e.g., more, less, same as), telling stories (e.g., *Ten Black Dots*¹⁰), and singing songs that involve number problems (e.g., *Five Little Monkeys*) all promote early mathematical development. Early childhood professionals must provide opportunities for active exploration and discovery to support mathematical thinking for a child's school readiness and later success.

Areas of mathematical thinking in the standards

The Arkansas Child Development and Early Learning Standards focus on four areas of mathematical thinking:

 Demonstrates number sense and an understanding of quantity outlines a child's increasing knowledge of numbers and counting, the ability to compare

¹Clements, D. H., & Sarama, J. [2014]. Learning and teaching early math: The learning trajectories approach [2nd ed.]. New York, NY: Routledge.

²Stevenson, H., & Newman, R. [1986]. Long-term prediction of achievement and attitudes in mathematics and reading. Child Development, 57, 646-59.

³Wolfgang, C., Stannard, L., & Jones, I. (2001). Block play performance among preschoolers as a predictor of later school achievement in mathematics. *Journal of Research in Childhood Education*. 15(2).

⁴Duncan, G.J, et al. [2007]. School readiness and later achievement. *Developmental Psychology*, 43 [6].

⁵Seifert, K. 1993. Cognitive development and early childhood education. In B. Spodek (ed.), Handbook of Research on the Education of Young Children (9-23). New York: Macmillan.

⁶Case, R. & Okamoto, Y., eds. [1996] *The role of central conceptual structures in the development of children's thought.* Monographs of the Society for Research in Child Development, 61 [1-2]. Chicago: University of Chicago Press.

⁷Clements, D. H. & Sarama, J. A. (2009). Learning and teaching early math: The learning trajectories approach. New York: Routledge.

8 | Szard, V., Dehaene-Lambertz, G., & Dehaene, S. [2008]. Distinct cerebral pathways for object identity and number in human infants. Public Library of Science. Biology 6[2].

⁹Ginsburg, H.P., Klein, A., & Starkey, P. [1998]. The development of children's mathematical thinking: Connecting research with practice. In I.E. Sigel, K.A., Renninger, [Eds.] *Handbook of Child Psychology*, Vol. 4, NY: Wiley.

¹⁰Crews, D. (1968). Ten black dots. New York: Scholastic.

Mathematical Thinking

whether items and groups are bigger or smaller than one another, as well as an understanding of the relationship between a number and the quantity it represents, changes in quantity (addition and subtraction), and foundational concepts related to division and fractions.

- Algebraic thinking charts a child's progression in the ability to sort objects and recognize and create patterns.
- Participates in exploratory measurement activities and compares objects focuses on a child's growing ability to measure, compare, and organize (seriate) objects.
- Explores and describes shapes and spatial relationships provides a progression of a child's knowledge of shapes and spatial sense, as well as the child's ability to manipulate shapes.

Potential warning signs of mathematical difficulties or delay

Early childhood professionals play a key role in the early identification of delays in mathematical development. Although the standards have been developed with the understanding that children's development and learning vary widely, there are signs to watch for that might indicate a developmental delay or future mathematical difficulties. Signs that may indicate the risk of future mathematical difficulties in school include:

• For older preschool children (4-5 years old), difficulty learning to associate specific numbers to a small group of items (i.e., fewer than four), sorting items in logical ways, remembering numbers, and sensing time accurately (e.g., wants to know soon after arriving at school why it's not lunchtime already).

- · Five-year-old children who do not recognize numbers, have difficulty counting, and have problems recognizing patterns, sizes, shapes, or colors.
- Children from families who have a history of learning disabilities,¹¹ children whose mothers consumed alcohol during pregnancy,12 children who were born at a low birth weight,13 and children who have experienced a traumatic brain injury¹⁴ are at higher risk of a mathematical learning disability.

Early childhood professionals and parents know the young children in their care best. If there is a suspicion of a developmental delay or risk of future mathematical difficulties, it is important to consult a medical or early childhood specialist.

Special considerations

Typically, children reach the mathematical thinking indicators at different ages. However, the development of children's mathematical thinking skills depends on their exposure to and engagement in mathematical learning opportunities both at home and in early learning settings. The varying experiences of children outside of their early learning setting provide them with different foundations from which to build mathematics learning. Excellence in mathematics education requires equally high expectations and strong support for all children. Teachers must know as much as they can about these differences and build on children's varying experiences to foster new learning.¹⁵ Building on children's individual strengths and learning styles makes mathematics experiences more effective.

Language plays a primary role in teaching and learning mathematics, so it is important to culturally and linquistically diverse children that language does not become a barrier to teaching mathematics. It is important to use mathematics

[&]quot;Shalev, R. S., Manor, O., Kerem, B., Ayali, M., Badichi, N., Friedlander, Y., & Gross-Tsur, V. (2001). Developmental dyscalculia is a familial learning disability. Journal of Learning Disabilities, 34[1], 59 - 65.

¹²Kopera-Frye, K, Dehaene, S., & Streissguth, A. P. [1996]. Impairments of number processing induced by prenatal alcohol exposure, Neuropsychologia, 34, 1187-1196.

¹³Isaacs, E.B., Edmonds, C. J., Lucas, A. & Gadian, D. G. (2002). Calculation difficulties in children of very low birthweight: A neural correlate. Brain, 124, 1701–1707.

¹⁴Levin, H. S., Scheller, J., Rickard, T., Grafman, J., Martinkowski, K., Winslow, M., & Mirvis, S. [1996]. Dyscalculia and dyslexia after right hemisphere injury in infancy. Archives of Neurology, 53[1], 88-96.

¹⁵National Association for the Education of Young Children. [2002]. Early childhood mathematics: Promoting good beginnings. Washington, DC: NAEYC.

🛘 🖿 🖿 🖿 Mathematical Thinking

vocabulary with visual representations of the concepts that are being taught (e.g., using number lines, different block shapes, etc.), and that children are given a variety of ways to understand a given concept.

Early childhood professionals must ensure that young children with disabilities can fully participate in learning activities that foster mathematical thinking. Children with disabilities may require adaptations both to engage in learning activities and to demonstrate their understanding of mathematical concepts.

Mathematical Thinking: Key Takeaways

- · Children have an inherent interest in mathematics and can learn mathematical concepts at a very young age.
- · Children's mathematical abilities as they enter kindergarten predict their mathematics achievement throughout school and are even related to later reading achievement.
- All early childhood professionals, whether or not they feel skilled in math, can be great teachers of early mathematical concepts. Early childhood professionals use a range of developmentally appropriate experiences and teaching strategies like counting, using comparison vocabulary, telling stories, and singing songs.

MT1. NUMBER CONCEPTS AND OPERATIONS

MT1.1 Demonstrates number sense and an understanding of quantity					
\$BIRTH-8m	🧘 9–18m	19-36m	3 7-48m	49-60m	
Attends to quantity while playing with objects (e.g., reaches or looks for more than one object)	Knows some number names (e.g., gestures "two" when asked age), a or signs more number words in se (e.g., says "one, two, three, five")	and later in this age range says	Says or signs number words in ord ability to count to 5, then up to 10 by the end of this age range	, and finally to 20 and beyond Names what number comes	NUMBE
				after another number with decreasing need to count up from one (e.g., When asked "What comes after four?" immediately says "Five" instead of "One, two, three, four, fivefive!")	NUMBER NAMES &
	Places objects in one-to-one correspondence; later in this age period, begins to use the words more," "less," or "the	Visually determines (without counting) which group of objects has more or less for groups of five or fewer objects (e.g., chooses a group that has	Identifies place in a series using terms like first, second, last, etc. (ordinality)		COMPARISON OF QUANTITY
	same	more of a preferred item; indi- cates which group of crackers has more when prompted)	Counts to determine and compare wone group is more than, less than, o group (for groups of five to ten objection)	r the same as objects in another	ISON
	Shows early one-to-one cor- respondence* when support- ed by context (e.g., places	· · · · · · · · · · · · · · · · · · ·	t objects using one number for each ng consistency uses the last number dinality)		
	one plastic egg in each indentation in a muffin tin)	Instantly recognizes without counting (subitizes) the number of objects in sets of one to three objects	Instantly recognizes without countin one to four objects (e.g., when playir the number of blocks under a sheet correctly identifies number of blocks	ng game where teacher changes and then uncovers them, child	CONNECTION OF NUMBER NUMERAL, & QUANTITY
			Begins to use numerals to represent puts three counting bears on a card w	, , , ,	ON OF NUL, & QUA
			Shows increasing understanding of to up closed fist to show "no more more ing the last verse of the song; when bears during a game and asks, "Now responds "None!"]	nkeys jumping on the bed" dur- teacher takes all of counting	JMBER, NTITY

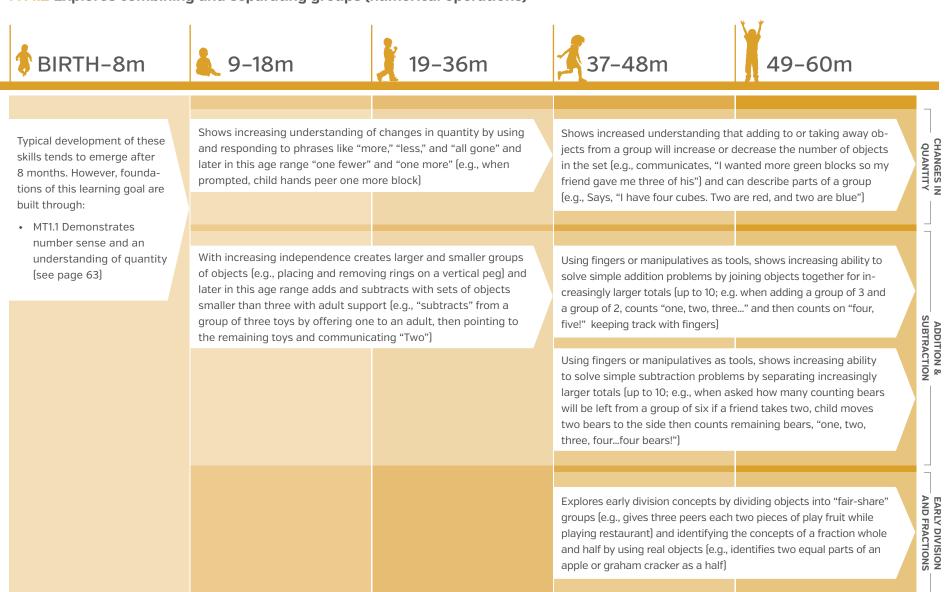
One-to-one correspondence: matching each item in a set to one-and only one-item in another set or, in counting, matching one number word to each object in a set being counted.

Produces a set of a certain number when prompted (e.g., puts five

napkins on the table when asked)

MT1. NUMBER CONCEPTS AND OPERATIONS

MT1.2 Explores combining and separating groups (numerical operations)



Mathematical Thinking

MT2. ALGEBRAIC THINKING

MT2.1 Uses classification and patterning skills





9-18m



19-36m







49-60m

Explores the characteristics of objects through various means (e.g., banging, mouthing, dropping) and shows different responses to familiar and unfamiliar people and situations

> Forms groups of like objects based on broad categories (e.g., puts toy cars in one pile and toy animals in another) and later in this age range, child can name the attribute used in sorting

> > Sorts objects based on a single, simple characteristic (e.g., color, shape, size) with increasing ability to sort into more than two categories (e.g., making three color groups instead of two color groups)

Sorts objects by more than one attribute (e.g., color and shape); attends to more complex attributes (e.g., weight, texturel: Sorts and then resorts based on a different characteristic (e.g., sorts by size and then by color)

CLASSIFICATION

PATTERNING

Enjoys and anticipates repetition in activities and daily routines (e.g., smiles in anticipation of adult revealing face during peeka-boo; makes vocalizations upon hearing a familiar song that is sung each time they are diapered)

> Repeats certain action sequences intuitively (e.g., fills up and dumps out container repeatedly) and joins in or copies simple patterns (e.g., does stomp-clap-stomp-clap movements during a song with modeling and support] Later in this age range, shows recognition of simple ABAB patterns (e.g., points to stripes on a shirt and communicates, "Black, white, black, white."]

Recognizes, extends, and replicates simple repeating patterns* (e.g., triangle, square, triangle, square or repeated music verses)

> Creates own patterns in different forms (e.g., objects, sounds, movements) and fills in missing elements of a simple pattern (e.g., selects a green counting bear and completes the series of bears set out by the teacher: yellow, green, green, yellow, green, green, yellow, ____, green)

^{*}Simple patterns include ABAB format (e.g., cat, cow, cat, cow) and AAB or ABB patterns (ABB Pattern: red, blue, blue, blue, blue). It is important when presenting patterns to children that the pattern unit be repeated twice to establish the pattern (e.g., AAB pattern: square, square, circle, square, square, circle).

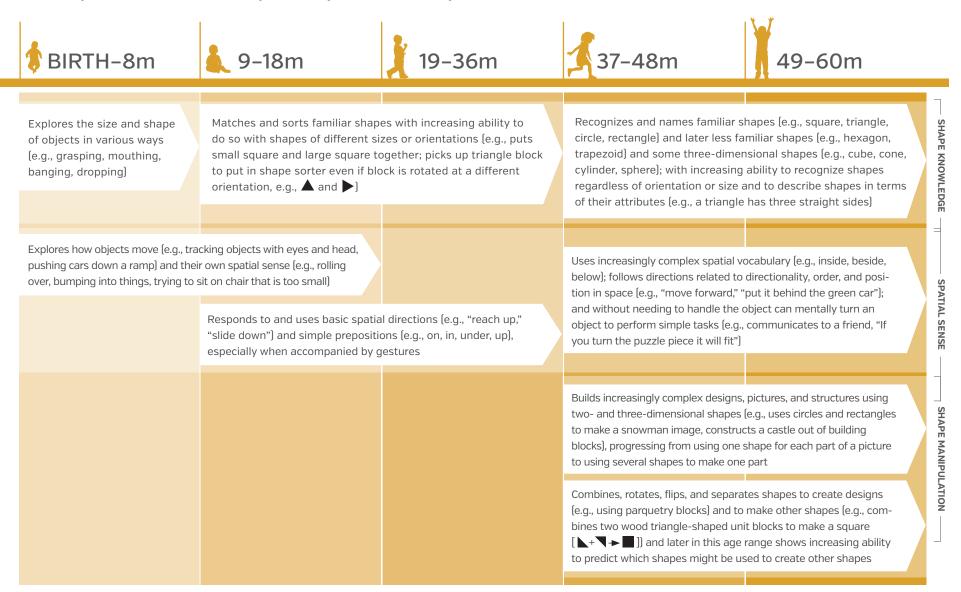
MT3. MEASUREMENT AND COMPARISON

MT3.1 Participates in exploratory measurement activities and compares objects

\$BIRTH-8m	♣ 9–18m	19-36m	3 7-48m	49-60m
Explores the size and shape of objects in various ways (e.g., grasping, mouthing, banging, dropping)	Investigates properties of object ume, relative size) through exploto squeeze large object into sma from one container to another); labels some attributes of objects communicating "I'm tall")	oration and play (e.g., tries aller container, pours liquid later in this age range	Measures attributes of objects (e non-standard units (e.g., lines up blocks and cars, end-to-end with explores formal measuring tools ruler) with increasing independent of the compares objects to set this age range uses a third objects (e.g., uses yarn to	o a variety of objects, such as nout gaps, to measure rug]; and (e.g., measuring cups, scale, nce and initiation of activity
	Uses descriptive words or signs of increasing complexity including "big," "little,", "hot," "cold," and makes simple comparisons (e.g., indicates which ball is bigger, correctly compares collections that are quite different in size)		Uses comparative language (e. directly compare two or more ("smaller," "smallest")	objects (e.g., identifies "small,"
			Shows increasing ability to ide ments of the same number of count to compare	- · · · · · · · · · · · · · · · · · · ·
			Organizes a small set of object creasing or decreasing order (s twigs from shortest to longest	seriation; e.g., arranges a set of

MT4. GEOMETRY AND SPATIAL SENSE

MT4.1 Explores and describes shapes and spatial relationships*



Spatial relationships = the positions of objects in space and how objects are oriented in relation to one another (e.g., whether something is over, under, beside, or on another object)

■ ■ ■ Science and Technology

Every young child is a natural scientist and engineer. Children strive to understand "the great mystery into which they are born" by observing the world around them and by experimenting. Even if a child doesn't grow up to be a scientist, the process of identifying problems, thinking critically, observing, analyzing information, noticing patterns, and forming conclusions is important for success in adulthood. Researchers have identified three broad areas of science knowledge and skills that are important for future learning and success. The first is knowledge of scientific practices. These practices include asking questions, making predictions, and conducting investigations. The second area is an understanding of the big concepts of science like understanding parts of a whole, how structure relates to how something functions, and change over time. The final area is science content, which includes knowing about living things, the earth, space, and man-made objects.¹

There is a great deal of overlap between the *Science and Technology* domain and other domains within the standards. For example, curiosity is the driving force behind advancements in science, which is an aspect of approaches to learning within the *Cognitive Development* domain. Children also need to sustain attention, use their mathematical knowledge and fine and gross motor skills in learning science, as well as collaborate with their peers in the scientific process.

It is important that Arkansas's early childhood professionals understand that young children have the capacity and inherent interest in engaging in scientific thinking. Arkansas's early childhood professionals must be intentional in preparing developmentally appropriate activities for children that foster scientific learning, and understand that science can be a means of building cognitive, social and emotional, mathematical, and even physical skills.

Areas of science and technology in the standards

The Arkansas Child Development and Early Learning Standards focus on three areas of science and technology:

- Scientific practices focuses on the growth in a child's ability to ask questions, form hypotheses, collect and analyze data, and communicate the results to others.
- **Knowledge of science concepts** charts the development of a child's understanding of systems (e.g., transportation system), the relationships between structure and function (e.g., round balls roll and plants needs stems) and stability and change (e.g., living things grow and seasons change).
- Knowledge of science content outlines a child's growing understanding of living things, nature and the environment, physical objects, as well as developmentally appropriate uses of technology and engineering practices to foster creativity and gain knowledge.

Special considerations

Children will reach the science and technology indicators at different ages. However, children's understanding of science and technology depends on their exposure to learning opportunities both at home and in early learning settings. There is great variability in children's exposure to early science and technology learning at home based on socioeconomic and cultural differences that contribute to disparities in children's knowledge of scientific concepts. These disparities can be overcome through intentional, developmentally appropriate teaching.

Language plays a primary role in teaching and learning science, so it is important to culturally and linguistically diverse children that language does not become a barrier to teaching science. Also, early childhood professionals must ensure that young children with disabilities can fully participate in learning activities that foster scientific thinking and practices. Children with disabilities may require adaptations both to engage in learning activities and to demonstrate their understanding of science and technology concepts.

NGSS Lead States. [2013]. Next generation science standards. For states, by states. Washington, DC: The National Academies Press.

■ ■ ■ Science and Technology

Finally, the science and technology indicators address appropriate interactions between children and technology to support learning, exploration, play, and creativity. Although technology can be used for multiple purposes to support learning, the American Academy of Pediatrics (AAP) provides well-balanced guidance related to digital devices and screens. Arkansas's early childhood professionals should consult Arkansas's minimum child care licensing requirements and the AAP publication, *Beyond 'turn it off': How to advise families on media use* for guidance on the use of technology and screen time for young children.²

Science and Technology: Key Takeaways

- Young children have the capacity and inherent interest to engage in scientific thinking.
- Arkansas's early childhood professionals must be intentional in preparing developmentally appropriate activities for children that foster scientific learning, and understand that science can be a means of building cognitive, social and emotional, mathematical, and even physical skills.
- Although technology can be used for multiple purposes to support learning, the
 American Academy of Pediatrics (AAP) provides well-balanced guidance related to
 the use of digital devices and screens during early childhood. Arkansas's early childhood professionals should consult Arkansas's minimum child care licensing requirements and the AAP publication, Beyond 'turn it off': How to advise families on media
 use for guidance on the use of technology and screen time for young children.

²Brown, A, Shifrin, D.L. and Hill, D. (2015). "Beyond 'turn it off'" How to advise families on media use." In AAP News. DOI: 10.1542/aapnews.20153610-54

BIRTH-8m



9-18m



19-36m





49-60m

Explores and manipulates objects using multiple senses (e.g. touch, taste, sight, smell, sound)

Asks questions, makes observations, and predictions about the world around them with adult support [e.g., "Where snow go?"; describes texture of fabrics as soft, scratchy, or bumpy when prompted; predicts that apples will be served for snack]

Asks questions about the world (e.g., "What do plants need to grow?") and seeks answers from various sources (e.g., asks teacher to help find information about spiders in a book)

Makes increasingly complex observations about objects and events (e.g., notices that outdoor area smells different after rain)

Makes predictions about what might happen based on past experience (e.g., "I think that adding yellow paint to blue paint will make green", "I think the ping pong ball will float") OBSERVATIONS, QUESTIONS, & PREDICTIONS

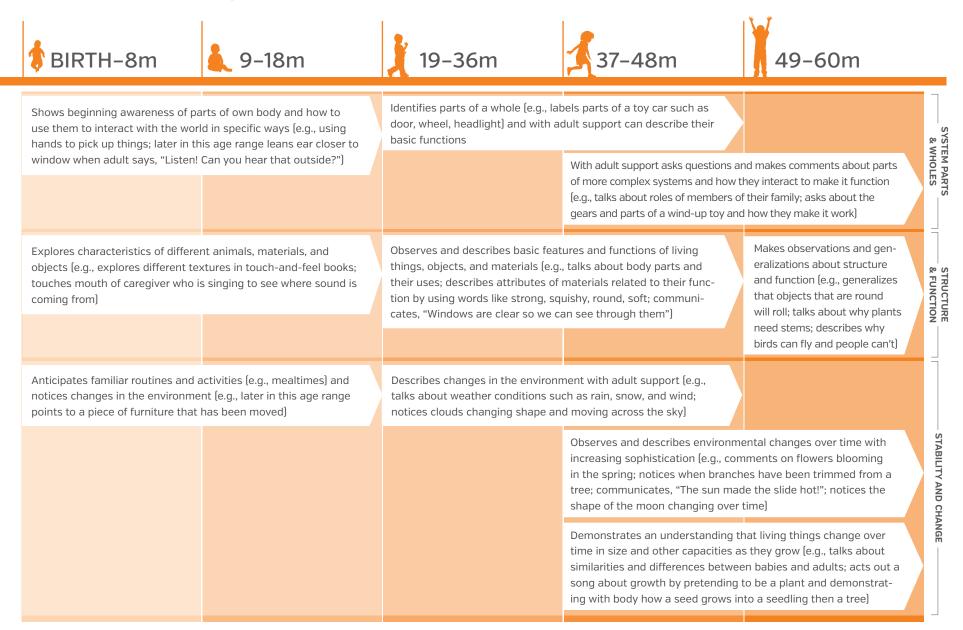
ST1. SCIENTIFIC PRACTICES

ST1.1 Engages in the scientific process to collect, analyze, and communicate information (continued)

♦ BIRTH−8m	🧘 9–18m	1 9-36m	3 7-48m	49-60m	
Recognizes ability to make things object and it moves) and intention the reaction (e.g., bangs block on the sound it makes; flips switches on a water to see toys move)	ally repeats actions to observe floor repeatedly to hear the	Explores cause-and-effect relation change the reaction (e.g., mixes re mixes red paint with green paint; tation of blocks used when attempthat doesn't fall down)	ed paint with blue paint, then changes the size and/or orien-		HYPOTHES
			Engages in adult-supported invest potheses (e.g., mixes soil and wate out of classroom materials and see will hold before collapsing; waters another to answer the question, "D	or to make mud; builds a "bridge" being how many foam blocks it seeds in one container, but not	INVESTIGATION & HYPOTHESIS TESTING
			With adult assistance, analyzes, into (e.g., compares initial prediction of vactual results; records information t	which objects would float to	DATA ANALYSIS & COMMUNICATION

ST2. KNOWLEDGE OF SCIENCE CONCEPTS

ST2.1 Demonstrates knowledge of core science ideas and concepts



ST3. KNOWLEDGE OF SCIENCE CONTENT

ST3.1 Demonstrates knowledge of the characteristics of living things, the earth's environment, and physical objects and materials

♦ BIRTH−8m	♣ 9–18m	19-36m	37–48m 49–60m
	ceristics of living things (e.g., Observe squeals when sees a dog; runs hand a butterfly, ladybug, or bird)	With increasing independence, asks and answers questions about the similarities, differences, and categories of plants and animals (e.g., talks about how birds have feathers covering their bodies, but snakes have scales)	
			Shows curiosity and knowledge about how living things grow and change over time (e.g., talks about how kitten at home is getting bigger; asks why leaves change color)
			With adult support describes characteristics that define living things (e.g., breathes, moves, grows)
			Shows curiosity about the relationship of living things to their environments/habitats (e.g., asks why fish always live in water; wonders where birds sleep)
	d (e.g., closes eyes and tilts head up atural materials such as water, dirt, a		Investigates and uses increasingly complex vocabulary to describe natural elements in the environment (e.g., observes a
			group of ants moving on the playground and comments, "They're moving around like they're scared"; draws different kinds of leaves in the science center and communicates "This one has round edges, this one has pointy edges."]
	Helps care for the environment (e. towel; participates in some way in		Demonstrates respect for the environment (e.g., observes flowers or insects without intruding or destroying; picks up a piece of litter and says, "Animals might get sick if they eat this")
Actively explores and experiments with the physical properties of objects and materials (e.g., combines different substances such as water and dirt; stacks and knocks down towers; bounces balls; explores fabrics with different textures)		Uses observable characteristics to describe and categorize physical objects and materials based on similarities and differences [e.g., after participating in an investigation, sorts items into those that float and those that sink; sorts objects made of wood and those made of plastic]	
			that float and those that sink; sorts objects made of wood and those made of plastic)

ST3. KNOWLEDGE OF SCIENCE CONTENT

ST3.2 Uses tools and engineering practices to explore and solve problems

\$BIRTH-8m	♣ 9–18m	19-36m	3 7-48m	49-60m
Uses body parts as tools to obtain a result (e.g., reaches out and grasps a rattle)	Uses own body, other people, or happen (e.g., pulls an adult's han button on a toy; later in this age something under a chair)	nd and guides it to push a		NO.
			Uses a variety of tools (e.g., rule glass, toy stethoscope, unit blocks	s in the block area; uses pulleys r, balance scale, magnifying , measuring cups, thermometer)
			to gather information, investigated Communicates how tools are use ladders help firefighters, stethose	ed by people in their world (e.g.,
		Explores principles such as stability structure) and force and motion (e.g		of relationships between vari-
				of relationships between vari- ness of a ramp and speed of a ability of structure) With adult support, generates multiple solutions to problems, tests solutions and revises them, (e.g., builds block tower that falls with a foundation of small blocks; uses bigger blocks the next time) and develops increasingly detailed explanations of their ideas and reasons for outcomes

^{*}Engineering Practice = the application of scientific principles to determine criteria for a successful solution to a problem and identify constraints.

ST3. KNOWLEDGE OF SCIENCE CONTENT

ST3.3 Engages in developmentally appropriate interactions with technology* and media that support creativity, exploration, and play

BIRTH-8m



9-18m



19-36m





TECHNOLOGY HANDLING

DIGITAL LITERACY | |

DIGITAL CITIZENSHIP

Typical development of these skills tends to emerge after 8 months. However, foundations of this learning goal are built through:

 CD1.1 Shows curiosity and a willingness to try new things (see page 26) Incorporates technology tools into their pretend play (e.g., pretends to call someone on a toy phone, uses a keyboard in the "office" prop box to pretend to write someone a letter)

Explores and uses simple tools (e.g., spoons, hairbrushes, crayons) and later in this age range common devices such as sinks and toilets

Develops knowledge of and explores the functionality of simple digital devices (e.g., touch screen, e-book reader, digital camera, copier, light table, music player)**

Identifies technology tools for multiple purposes, including creating, problem solving, gathering information, and documenting [e.g., creates a picture or story on an electronic device, suggests looking up a question or the meaning of a word on the internet, records a story made up on a recording device]

Shows knowledge of how to use technology in safe, healthy, acceptable, responsible, and socially positive ways (e.g., suggests sending a get-well message to a friend who is sick)

Follows directions and class rules for using digital devices (can log in and out; keeps foreign materials away from equipment; handles equipment with care; knows the time limit or sign up rule for access to the device)

^{*}Arkansas's child care licensing requirements prohibit the use of television, DVDs, video cassettes and computer/video games and other screen time activities for children younger than two years of age. New recommendations published in the fall of 2015 by the American Academy of Pediatrics (AAP) reinforce this regulation and suggest that optimal educational media opportunities begin after age 2. The guidance discourages the use of screen media for children under the age of 2 as neuroscience suggests that very young children learn best through two-way, social, and language-rich interactions. However, the AAP guidance does acknowledge some appropriate uses of technology for infants and toddlers such as viewing digital photos, participating in Skype interactions with loved ones, co-viewing e-books, and engaging with some interactive apps.¹

^{**}Children's proficiency using technology tools will differ in large part due to varying amounts of exposure and modeling they receive in their home environment, which may depend on family values and attitudes toward technology as well as access to technology tools and associated resources (e.g., broadband internet connection)

¹ Brown, A., Shifrin, D.L., & Hill, D.L. (2015). Beyond "turn it off": How to advise families on media use. AAP News, 36, 10, 5 55. doi: 10.1542/aapnews.20153610-54.

The area of social studies in early childhood consists of a child's progression from "me" to "we." Young children show a gradual expansion in their understanding of the world, with infants and toddlers first interested primarily in themselves. During the preschool years, children begin to widen their circles to include their early learning setting, family and cultural heritage, and broader community. Children also become interested in the roles that people play in society. Social studies is a broad area of learning, incorporating concepts from the fields of history, geography, anthropology, sociology, civics, economics, and mathematics. For example, understanding basic geographical concepts such as knowing where you are and how to get around in the world is related to the understanding of spatial relationships, a mathematical thinking skill.

The foundation of children's learning of social studies concepts such as history and geography lies in their early understanding of daily routines, sequences and the characteristics of familiar places such as home and school. Through social studies, early childhood educators can broaden a child's understanding of the world by taking them "beyond the here-and-now." By talking about things that are not immediately present in the child's environment, a child can learn of other places, cultures, and traditions. For example, a child's interest in building castles in the block area may lead to a discussion of what it may have been like to live in another time when people did not have access to modern technologies such as electricity or cars. Arkansas's early childhood professionals can also encourage children to explore their own and others' family and cultural identities.

Areas of social studies in the standards

The Arkansas Child Development and Early Learning Standards focus on two areas of social studies:

Family, community, and culture describes a child's development of family
pride and positive social identity, including their participation as a member
of a learning community, their evolving family and cultural identity, and their
awareness of roles in society.

History and geography outlines a child's growing awareness of time, including their understanding of concepts such as past and future and change over time, as well as their knowledge of simple geographic concepts.

Social Studies: Key Takeaways

- During the preschool years, children begin to widen their circles to include their early learning setting, family and cultural heritage, and broader community.
- Social studies is a broad area of learning, incorporating concepts from the fields of history, geography, anthropology, sociology, civics, economics, and mathematics.
- Through social studies, early childhood educators can broaden a child's understanding of the world by talking about things that are not immediately present in the child's environment.

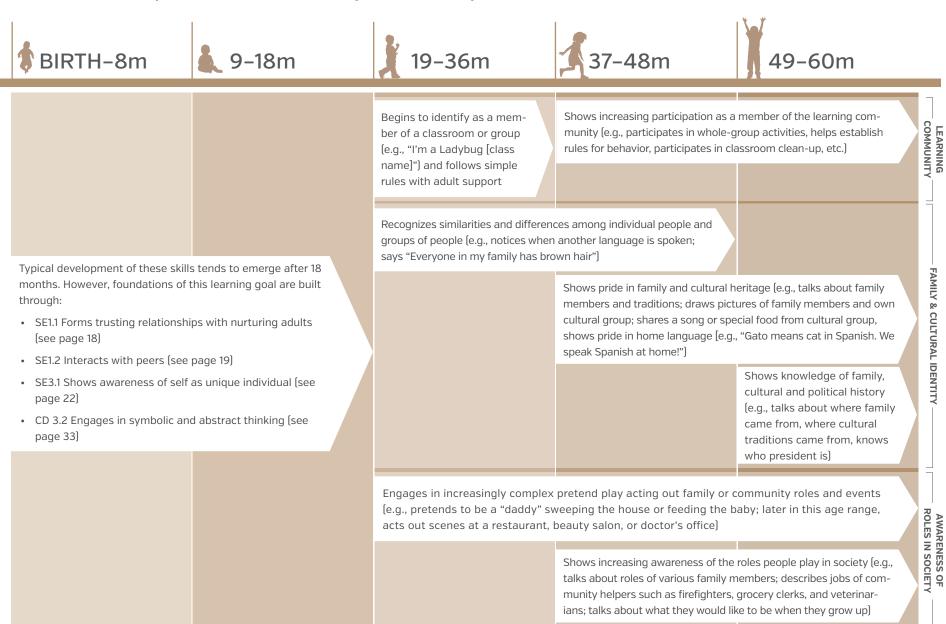
Neill, P. (2015). Going from me to we: Social studies in preschool. High Scope Extensions, 29[1], 1-10.

²Seefeldt, C. (1997). Social studies in the developmentally appropriate integrated curriculum. In C. H. Hart, D. C. Burts, & R. Charlesworth (Eds.), *Integrated curriculum and developmentally appropriate practice: Birth to age eight* (pp. 171–199). Albany, NY: SUNY Press.

³Clements, D. H. & Sarama, J. (2009). Early childhood mathematics education research: Learning trajectories for young children. In *Learning and Teaching Early Math: The Learning Trajectories Approach*, New York: Routledge.

SS1. FAMILY, COMMUNITY, AND CULTURE

SS1.1 Demonstrates positive connection to family and community



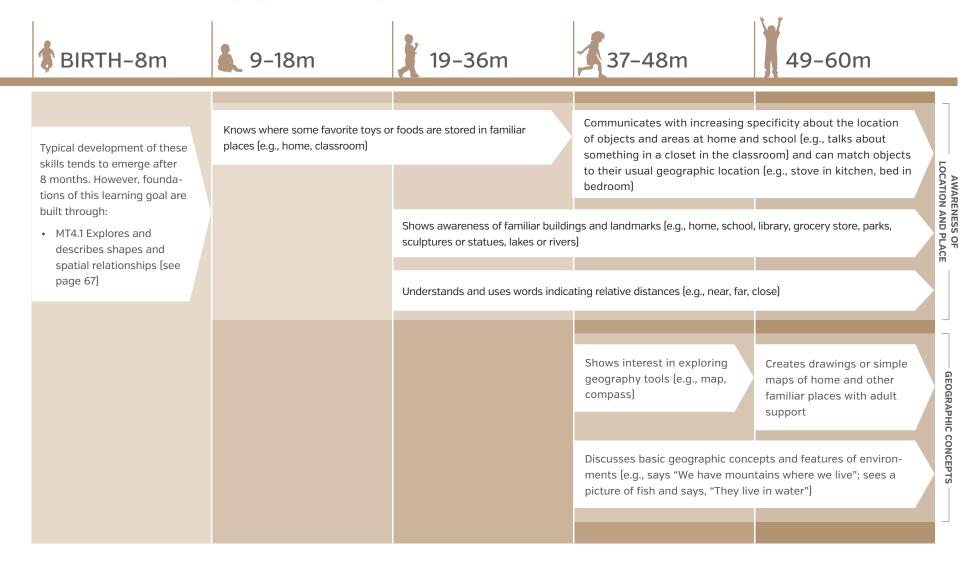
SS2. HISTORY AND GEOGRAPHY

SS2.1 Shows awareness of sequence and change over time

\$BIRTH-8m	♣ 9–18m	19-36m	37-48m	49-60m	
	neduled daily activities (e.g., when bot this age range, moves to the table aft		Simple account of what happened that day, com		AWARENESS OF PAST & FUTURE
		Understands and, later in this age r (e.g., "now/later," "day/night", "last t	ange, uses increasingly complex time- time/next time"	-related words and concepts	TIME

SS2. HISTORY AND GEOGRAPHY

SS2.2 Demonstrates simple geographic knowledge



Creativity and Aesthetics

Young children love to express themselves through music, movement, visual arts, and drama. With the proper learning environment, engaging in artistic expression can foster a child's creativity and support other areas of development and learning. Creativity and creative thinking are critical 21st century skills, important drivers of innovation in society, and key elements for success and happiness in school and adulthood.¹ At the same time, music, visual arts, and drama are serious fields of study much like mathematics and science. Sophisticated artistic expression requires an understanding of the specific concepts and processes of these art forms that begins in early childhood. Music, for example, requires an understanding of tempo, dynamics (loud and soft), and pitch. Visual art requires an understanding of shape, color, and texture. Arkansas's early childhood professionals can help young children learn these concepts and provide a foundation for more advanced artistic expression.

The domain of *Creativity and Aesthetics* intersects with all other areas of development and learning. Through music, movement, visual arts, and drama, children can improve their fine and gross motor skills, language and vocabulary, and social skills. Children can also learn mathematical and science concepts through different forms of artistic expression (e.g., fractions and sound waves), as well as about different cultures through songs, dance, and art. It is important that Arkansas's early childhood professionals encourage exploration of different forms of artistic expression and provide developmentally appropriate opportunities to draw, sing, and engage in dramatic play activities.

Areas of creativity and aesthetics in the standards

The Arkansas Child Development and Early Learning Standards focus on three areas of creativity and aesthetics:

- Music and movement focuses on a child's growing ability to explore and move to music, understand music concepts, and appreciate music.
- **Visual arts** charts a child's progression in exploring and appreciating art, understanding art concepts, and expressing themselves through art.
- **Drama** outlines a child's growing ability to explore drama, understand drama concepts, and appreciate and express themselves through drama.

Special considerations

Children will reach the creativity and aesthetics indicators at different ages. However, children's understanding of the indicators depends on their exposure to learning opportunities both at home and in early learning settings. There is great variability in children's exposure to art, music, and drama at home, which is related to socioeconomic and cultural differences. These differences contribute to disparities in children's knowledge, understating, and engagement in music, movement, visual art, and drama.

For culturally and linguistically diverse children, using art, music, and stories from their home culture is an excellent way of engaging them in classroom learning activities. In addition, early childhood professionals must ensure that young children with disabilities can fully participate in artistic activities that support progress on the creativity and aesthetics indicators. Children with disabilities may require adaptations both to engage in learning activities and to demonstrate their understanding of artistic concepts.

Creativity and Aesthetics: Key Takeaways

- Creativity and creative thinking are critical 21st century skills, important drivers of innovation in society, and key elements for success and happiness in school and adulthood.
- Music, visual arts, and drama are serious fields of study much like mathematics and science. Sophisticated artistic expression requires an understanding of the specific concepts and processes of these art forms that begins in early childhood.
- Through music, movement, visual arts, and drama, children can improve development and learning in other areas. It is important that Arkansas's early childhood professionals encourage exploration of different forms of artistic expression and provide opportunities to paint, sing, and engage in dramatic play activities.

Partnership for 21st Century Skills. [2007]. The Intellectual and Policy Foundations of the 21st Century Skills Framework.

CA1. MUSIC AND MOVEMENT

CA1.1 Explores through listening, singing, creating, and moving to music

4	BIRTH-8m
9	DIK I H-OII



9-18m



19-36m





49-60m

EXPLORATION OF MUSIC & MOVEMENT

MUSIC & MOVEMENT CONCEPTS

MUSICAL EXPRESSION & APPRECIATION

Responds to music by turning head and reacting with body movements

Uses objects and tools to make sounds (e.g., shakes rattle)

Enjoys producing music and other sounds with voice and simple instruments (e.g., explores making noises with tambourine, attempts to blow into a whistle or harmonica)

Moves body in response to rhythms and music (e.g., sways to the sound of music, claps along with song, though may not be on the beat)

Explores a widening variety of culturally diverse musical instruments, using them to produce increasingly complex rhythms, tones, melodies, and songs

Uses body movement to respond with increasing accuracy to beat, dynamics (loud versus quiet), and tempo (speed) of music (e.g., marches with musical instruments with increasing ability to move in step with the beat; tiptoes during quiet music and stomps when it gets louder; moves slower or faster in time with music)

Imitates and begins to demonstrate understanding of fast/slow and loud/soft as they relate to playing music and singing

With adult support demonstrates the foundational components of music, including tempo (e.g. by singing faster when asked to up the tempo), dynamics (e.g. by louder and softer during a song and pitch*[e.g. by singing higher and lower notes]

Develops preferences for favorite songs and fingerplays (e.g., claps and smiles or communicates "Again! Again!" when a song is finished; requests certain songs or fingerplays be played or sung)

Requests favorite types of music, discusses favorite songs, and shows appreciation for the music and dance of others

Expresses self through music by making up songs, changing words to familiar songs, and experimenting with rhythmic patterns

^{*}Tempo = how slow or fast a song should be sung or played

^{*}Dvnamics = loudness or softness of a piece of music

^{*}Pitch = how high or low a note or tone is

CA2. VISUAL ARTS

CA2.1 Explores, manipulates, creates, and responds to a variety of art media





9-18m



19-36m





49-60m

Explores textures and other sensory experiences

Shows interest in gazing at pictures, photographs, and bright and/or contrasting colors

Participates in child-initiated visual art activities* and with adult support experiments with a variety of media and materials (e.g. crayons, markers, colored pencils, chalk, paints, collage materials, play dough, clay)

Engages in child-initiated visual art activities with increased independence, intentionality, planning, and knowledge of art media and materials (e.g., asks a friend, "Can I use the easel when you're done?"; creates two- or three-dimensional art that approximate or depict people, animals, and objects; says, "I'm going to draw daddy," before starting a project)

Shows increasing range and intentionality in art creations (e.g., draws multiple simple shapes; uses a variety of tools to make different textures in play dough; shows preferences and makes choices about colors)

With adult support demonstrates the foundational components of art, including line, shape (e.g. by drawing lines and different shapes), color (e.g. by using different colors), and texture (e.g. by describing how a piece of art feels

Tells about their artistic creations with increasing detail

Recognizes and states that objects in the environment are beautiful and later in this age range, can articulate why they believe it is beautiful

Chooses their own art for display in the learning environment or for inclusion in a book and briefly explains their choice

Communicates with others about art by discussing the ideas behind own art and how it was made; the feelings generated by looking at different art; and by showing appreciation for the artwork of others

EXPLORATION OF ART

ART CONCEPTS

ART APPRECIATION & EXPRESSION

^{*}Visual art activities = a broad category of art activities that include drawing, painting, printmaking, sculpture, graphic art, and other art forms.

^{*}Texture = the way an object feels to the touch or looks as it may feel if it were touched

Creativity and Aesthetics

CA3, DRAMA

CA3.1 Explores feelings, relationships, and concepts through imitation, pretend play, and sociodramatic play

\$BIRTH-8m	♣ 9–18m	19-36m	3 7-48m	49-60m
Engages in social play (e.g., peek-a-boo) with adults)	Tries out roles and relationships the using real objects (e.g. uses cup to age range uses objects to represent block is a telephone)	pretend to drink) and later in this	Explores a variety of themes and ro life scenarios and people, fictional s that expresses feelings and helps p	stories and characters, and play
			Engages in increasingly complex signs or assumes multiple roles cohesive stories through play	
				Discusses and expresses appreciation after viewing a performance by older children or a professional group.

^{*}Dialogue = the interactions both spoken and unspoken (facial expressions) that convey intent, feeling, or thought

■ ■ ■ Appendix: Overview of the Standards with Strands

Social and Emotional Development

SE1. Relationships with Others

SE1.1 Forms trusting relationships with nurturing adults

- Interactions
- Attachment relationships

SE1.2 Interacts with peers

- Develops friendships
- Stages of play
- Social skills

SE2. Emotional Expression and Understanding

SE2.1 Experiences, expresses, and regulates a range of emotions

- Emotion expression
- · Emotion regulation

SE2.2 Interprets and responds to the feelings of others

- Empathy
- Emotion understanding

SE3. Self-Awareness and Self-Concept

SE3.1 Shows awareness of self as unique individual

- Sense of identity
- · Characteristics of self and others
- Preferences

SE3.2 Demonstrates competence and confidence

- · Sense of autonomy
- Self-confidence

Cognitive Development

CD1. Approaches to Learning

CD1.1 Shows curiosity and a willingness to try new things

- · Exploration and investigation
- · Interest in new experiences

CD1.2 Shows persistence in approaching tasks

- Determination
- · Task completion
- Acceptance of challenges

CD2. Executive Function

CD2.1 Focuses and sustains attention

- · Attention & engagement
- Selective attention

CD2.2 Shows flexibility in adjusting thinking and behavior to different contexts

- · Flexible thinking
- · Adjusting behavior to match context

CD2.3 Regulates impulses and behaviors

- Impulse control
- · Delay of gratification

CD2.4 Holds and manipulates information in memory

- · Short-term & working memory
- Long-term memory

CD3. Logic and Reasoning

CD3.1 Uses reasoning and planning ahead to solve problems and reach goals

- · Problem solving
- Planning

CD3.2 Engages in symbolic and abstract thinking

- Pretend play
- Symbolic representation
- Abstract thinking

Appendix: Overview of the Standards with Strands

Physical Development and Health

PH1. Gross Motor

PH1.1 Demonstrates locomotor skills

- Body movement
- Traveling
- Climbing
- · Complex movement

PH1.2 Shows stability and balance

- Core stability
- · Jumping, hopping, & leaping

PH1.3 Demonstrates gross-motor manipulative skills

- Catching
- Throwing
- Striking
- Kicking

PH2. Fine Motor

PH2.1 Demonstrates fine-motor strength, control, and coordination

- · Hand-eye coordination
- Grasp and manipulation

PH2.2 Adjusts grasp and coordinates movements to use tools

- Utensils
- Writing & drawing tools
- Scissors
- Variety of tools

PH3. Health and Well-Being

PH3.1 Demonstrates interest in engaging in healthy eating habits and making nutritious food choices

- Communicating needs
- · Exploration of food experiences
- Food knowledge

PH3.2 Shows awareness of safe behavior

- · Awareness of safe behavior and signals of danger
- Understanding of safety rules and practices

PH3.3 Engages in a variety of developmentally appropriate physical activities

- Participation in physical activity
- · Knowledge of benefits of physical activity

PH3.4 Takes appropriate actions to meet basic needs

- · Communicating needs
- · Personal care routines
- · Health habits

Language Development

LD1. Receptive Language

LD1.1. Understands and responds to language (in child's home language)

- Vocabulary & language comprehension
- Follows directions

LD2. Expressive Language

LD2.1. Uses increasingly complex vocabulary, grammar, and sentence structure (in child's home language)

- Expressive vocabulary
- · Grammar & sentence structure
- · Clarity of communication

LD3. Communication Skills

LD3.1. Communicates using social and conversational rules

- Conversations
- Social rules of language

LD4. English Language Development of Dual Language Learners

LD4.1. Demonstrates progress in attending to, understanding, and responding to English

- · English language development
- · Home language development

LD4.2. Demonstrates progress in speaking and expressing self in English

- English language development
- Home language development

■ ■ ■ Appendix: Overview of the Standards with Strands

Emergent Literacy

EL1. Engagement in literacy experiences and understanding of stories and books

EL1.1 Shows interest in literacy experiences

- Engagement in literacy experiences
- Variety of interests

EL1.2 Engages in read-alouds and conversations about books and stories

- · Engages with books and stories
- · Story comprehension
- Story structure
- · Informational texts

EL2. Phonological Awareness

EL2.1 Notices and manipulates the sounds of language

- Exploration of sounds of language
- Rhyme
- Alliteration
- Manipulating units of language

EL3. Knowledge and Use of Books, Print, and Letters

EL3.1 Responds to features of books and print

- · Book knowledge
- · Print knowledge

EL3.2 Shows knowledge of the shapes, names, and sounds of letters

- Alphabet knowledge
- · Letter-sound connections

EL3.3 Demonstrates emergent writing skills

- Pre-writing exploration
- · Letter and print writing concepts
- Early word writing

Mathematical Thinking

MT1. Number Concepts and Operations

MT1.1. Demonstrates number sense and an understanding of quantity

- · Number names & count sequence
- · Comparison of quantity
- · Connection of number, numeral, & quantity

MT1.2. Explores combining and separating groups (numerical operations)

- Changes in quantity
- · Addition & subtraction
- · Early division and fractions

MT2. Algebraic Thinking

MT2.1. Uses classification and patterning skills

- Classification
- Patterning

MT3. Measurement and Comparison

MT3.1. Participates in exploratory measurement activities and compares objects

- Measurement
- Comparison
- Seriation

MT4. Geometry and Spatial Sense

MT4.1. Explores and describes shapes and spatial relationships

- Shape knowledge
- · Spatial sense
- · Shape manipulation

■ ■ ■ Appendix: Overview of the Standards with Strands

Science and Technology

ST1. Scientific Practices

ST1.1. Engages in the scientific process to collect, analyze, and communicate information

- Observations, questions, & predictions
- · Investigations & hypothesis testing
- · Data analysis & communication

ST2. Knowledge of Science Concepts

ST2.1 Demonstrates knowledge of core science ideas and concepts

- System parts & wholes
- · Structure & function
- Stability & change

ST3. Knowledge of Science Content

ST3.1 Demonstrates knowledge of the characteristics of living things, the earth's environment, and physical objects and materials

- Living things
- · Nature & the environment
- · Physical objects & materials

ST3.2 Uses tools and engineering practices to explore and solve problems

- Knowledge & use of tools
- Engineering practices & thinking

ST3.3 Engages in developmentally appropriate interactions with technology and media that support creativity, exploration, and play

- Technology handling
- Digital literacy
- Digital citizenship

Social Studies

SS1. Family, Community, and Culture

SS1.1 Demonstrates positive connection to family and community

- Learning community
- · Family & cultural identity
- · Awareness of roles in society

SS2. History and Geography

SS2.1 Shows awareness of sequence and change over time

- · Awareness of past & future
- · Time concepts

SS2.2 Demonstrates simple geographic knowledge

- Awareness of location and place
- Geography concepts

Creativity and Aesthetics

CA1. Music and Movement

CA1.1. Explores through listening, singing, creating, and moving to music

- · Exploration of music & movement
- Music & movement concepts
- · Musical expression & appreciation

CA2. Visual Arts

CA2.1 Explores, manipulates, creates, and responds to a variety of art media

- · Exploration of art
- Art concepts
- · Art appreciation & expression

CA3. Drama

CA3.1 Explores feelings, relationships, and concepts through imitation, pretend play, and sociodramatic play

- · Exploration of drama
- Drama concepts
- Drama appreciation & expression