Early Learning Matters

ELM Curriculum User Guide: 3–5 Years

3rd Edition

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Introduction to the ELM Curriculum

3–5 Years

The Early Learning Matters (ELM) Curriculum is a comprehensive, research-informed program to support the optimal learning and development of children from birth to five years of age. The curriculum promotes skills linked to school readiness and life success with the best practices available. The practices include developmentally appropriate teaching strategies and the proven benefits of a coordinated mix of staff-guided and child-initiated learning experiences. ELM offers practical, easy-to-use resources designed to support a range of staff backgrounds and to support children's learning in families.

ELM is based on results of rigorous research on early childhood programs that enable young children to get off to a good start in school and in life. The curriculum is also based on the developmentally appropriate practice position statement[1] and program accreditation standards[2] of the National Association for the Education of Young Children (NAEYC). The development of ELM included extensive pilot testing in military child development centers and in-depth reviews of curriculum plans by prominent early childhood content experts and program leaders.

ELM's comprehensive approach includes content areas that studies indicate are critically important to children's school readiness and well-being. Some of these areas—especially self-regulation, literacy, and mathematics—received limited emphasis in early childhood programs and professional preparation programs even a decade ago. Long-standing components of early childhood programs, such as social-emotional and language development, are offered in ELM with updated approaches that reflect the latest research and recommendations of experts.

For classroom staff, ELM eliminates the daunting task of developing or finding activities that represent the early childhood field's best understandings of how to bolster early learning and development. ELM offers coherent, sequenced learning plans that include guidance on how to tailor experiences in response to children's understandings and abilities. In ELM, teachers are experts in adapting planned activities to meet the needs of children in their classroom.

ELM's goal of promoting school readiness is approached in a broad way. Studies point to the contribution of social competence as well as academic skills to success in school.[3] ELM directly supports all developmental areas related to school readiness: cognitive, social, emotional, language, and physical.[4]

ELM promotes the development of the whole child with planned learning experiences focused on specific skills. The plans offer clear guidance on how teachers can flexibly promote a specified learning goal. Research demonstrates the positive outcomes of a curriculum approach that integrates engaging, skill-focused learning experiences in both social and academic areas.[5]

Early Learning Matters

ELM consistently uses developmentally appropriate methods to promote skills that are basic to school readiness and life success. For some, the phrase "school readiness" may trigger images of worksheets, flash cards, and downward movement of elementary school practices into preschool-age classrooms. In contrast, ELM's approach to school readiness embraces a wide range of active learning strategies recommended by NAEYC and other early childhood leaders.[6] Guided play experiences are valued in ELM.

ELM's resources for working with children 3–5 years of age are designed for mixed-age classrooms and are the focus of this *User Guide*. There is a separate *User Guide* for classrooms serving children birth to 36 months of age.

ELM was developed by Purdue University for the Department of Defense Child Development Program and civilian programs of early care and education. The curriculum is available free of charge through Purdue University (www.elmcurriculum.org). Information about ELM may be requested at: elmcurriculum@purdue.edu

Key Characteristics of ELM: Intentional, Meaningful, Plentiful

At the heart of ELM are activity plans that describe focused learning experiences for young children. The curriculum also supports classroom staff in planning and offering additional learning experiences by providing an overview of each area promoted in ELM and suggesting more ways to promote specific skills in each area (see Areas Promoted by ELM section of this *Guide*). These resources reflect three key characteristics of the ELM Curriculum: learning experiences are intentional, meaningful, and plentiful. Each of these characteristics is described below.

Intentional

Classrooms that make a significant difference in children's lives are intentional in supporting children's learning. Experiences that help children move forward in their development and learning do not happen by chance. Activities in high-quality classrooms are thoughtful and purposeful, and staff respond to unexpected events during the day with a clear focus on goals for children's learning.[7]

ELM is organized around a comprehensive set of early childhood knowledge and abilities that provide a solid foundation for success in school and in life. The knowledge and abilities are called **foundation skills** in the ELM Curriculum. They represent strong research evidence and compelling recommendations of early childhood experts regarding understandings of content to promote in the early years.

ELM actively supports the development of 27 foundation skills across eight broad areas for preschool-age children. The eight areas represent conceptual and developmental domains included in NAEYC's accreditation criteria.[8] The skills are described in this *Guide*'s section on Areas Promoted by ELM, and are summarized in an adjacent chart.

Foundation Skills

Language/Literacy	Oral language Phonological awareness Letter knowledge Print knowledge Writing
Mathematics	Number knowledge Geometric and spatial knowledge Pattern knowledge Measurement knowledge
Self-Regulation	Self-control of behaviors, emotions, and thoughts Concentrate on experiences, self, and others Executive function
Social-Emotional	Relationship skills, including social problem-solving skills Emotion knowledge Perspective-taking Personal responsibility
Social Studies	Positive sense of self Appreciation of individual and family diversity Knowledge of social and physical environments Concepts of time
Creative Expression	Appreciation of art, music, drama, and dance Knowledge of creative processes Skills that support creative expression
Science	Inquiry skills, including use of the five senses and tools Knowledge of • living things • animal habitats • life cycles • earth and space
Physical/Health	Motor development Good health practices

Although each area promoted by ELM is comprised of distinctive content, some areas of learning and development are related to one another. There are links between mathematics and literacy skills,[9] for example, and between physical (motor) and cognitive development.[10] The research literature offers mostly speculations on why these associations exist and what they mean for early childhood programs. For certain, teaching a skill in one area does not guarantee development of a skill in another area. An obvious example is that learning about numbers does not lead to an understanding of letters. There are no shortcuts to developing important skills.

ELM respects the content integrity of the eight areas by generally focusing on one skill in a learning activity. At the same time, many ELM learning activities are designed to support the development of a foundation skill in another area. For example, a language/literacy activity aimed at improving children's understanding of prepositions (often a challenging skill for English language learners) promotes the development of self-regulation skills by using a *Simon Says* game to engage children in learning and practicing prepositions (Week 3, Day 4).

ELM reflects NAEYC's accreditation standard for a high-quality curriculum.[11] ELM offers a detailed written plan that specifies desired goals for children's learning and development, and learning experiences designed to achieve the desired goals. The desired goals are clearly defined, aligned with NAEYC standards, and communicated in straightforward terms that are accessible to families. The learning experiences consist of a well-defined arrangement of practices, materials, and settings that build on children's current skills and past experiences.

Effective support of children's learning involves zeroing in on content and using an intentional approach to teaching. Research based on results of eight large child care studies found that children are more likely to succeed academically when their teachers provide high-quality instruction explicitly centered on the skill being taught. Children showed the largest gains in language and literacy skills when teachers frequently interacted with children in engaging activities deliberately focused on language and academic skills.[12]

ELM promotes foundation skills and learning goals in the **sequence** in which children develop specific understandings and abilities. The curriculum builds on the developmental paths that children typically follow, including patterns of progression toward more advanced skills over time. For example, children generally develop the ability to segment and blend the two (component) words in compound words before developing the ability to identify the syllables in words.

The concept of general progression in children's learning and development is part of NAEYC's developmentally appropriate practice position statement.[13] Sequencing the order in which skills are introduced to children distinguishes a well-planned curriculum from a resource that offers a collection of activities that may not intentionally support mastery of beginning skills before expecting children to pursue more advanced content.

Consistent with NAEYC's third standard for program accreditation, high-quality classrooms use a variety of teaching strategies. In ELM, developmentally appropriate teaching strategies are purposefully embedded in learning activities to provide a sequenced mix of supports for children's learning. See the Example of Intentionality in Developmentally Appropriate Teaching

There also is an intentional use of different settings in the ELM Curriculum. Small group, large group, child-initiated play, and other common activity settings offer unique opportunities to support children's learning. Small groups and one-to-one interactions provide a child with individualized attention.[14] Large groups can be an efficient way to offer information, including demonstrations, to all children,[15] and to foster a

sense of classroom community. Periods of open-ended play can support rich learning experiences, especially when there is sensitive adult guidance that elaborates upon children's play activities.[16]

Children's daily experiences should not be dominated by one or several settings only. NAEYC's developmentally appropriate practice statement is clear that children benefit from a mix of self-directed play, guided play, and direct instruction.[17]

An approach that is high in a mix of staff-guided and child-initiated activities is consistently linked to positive outcomes, including kindergarten readiness and reading achievement in third and eighth grade compared to an approach that is mostly staff-directed or child-initiated only.[18] Research with children in center-based and family child care homes indicates that children who spent a majority of their day in a balanced arrangement of child-initiated and teacher-led activities had higher language scores than children who spent a majority of their day in child-directed activity settings.[19] Studies have found that children who spent the highest proportion of their classroom time in free-choice and gross-motor activities, and the lowest amount of time engaged in academic content, had smaller gains across the preschool year in language, literacy, mathematics, and social competence

Example of Intentionality in Developmentally Appropriate Teaching

NAEYC views intentionality as a hallmark of developmentally appropriate teaching.[37] Below are descriptions of how an ELM math learning activity (Week 11, Day 3) uses a strategic mix of instructional supports to help children sort items into groups of the same item, and then count the number of items in each group. The activity uses 7 of 10 effective teaching strategies recognized by NAEYC early childhood experts as developmentally appropriate.[38] The teaching strategies appear in boldface.

Summary of Learning Activity	How Teaching Strategies Help Children
The activity begins with a staff member **asking questions**: A basic recall question (How many fingers do we have?) followed by a higher-level question (How do we know?).	The recall question helps children focus on the topic (numbers) and sets the stage for the higher-level question that follows. Research supports this arrangement.[39]
The staff member then **provides information** by reminding children what it means to sort things. The staff member also **demonstrates** how to sort and **gives directions** for children's actions (take an item from a basket and put it in its appropriate group).	Children receive three different types of support for remembering how to sort: a verbal description, a demonstration, and directions for their sorting actions.
The staff member **gives assistance** during the activity by offering occasional reminders of how to sort. The activity plan also suggests the staff member **acknowledge** a child's actions as a way of offering a reminder of how to sort ("Treshawn picked a pencil. He put the pencil in the group with all of the other pencils.").	Children receive two different types of support during their sorting work: a verbal reminder and description of a child's sorting actions.
The ELM activity plan suggests the staff member could **add challenge** by asking children to think of other ways to sort the items (color, size, etc.).	If children readily sort the items by type, a teacher could use this scaffolding tip to stretch their thinking.

compared to children who participated in higher levels of individual and group learning.[20]

Meaningful

Children benefit from interactions with adults that are tailored to their current skills and contribute to progress in realizing worthwhile outcomes. Meaningful support for learning and development is responsive to children's understandings and abilities in the context of desired goals. This approach to working with young children is succinctly captured in the idea of using **challenging and achievable** goals for children as represented in NAEYC's developmentally appropriate practice statement.

ELM views classroom staff as experts in adapting learning experiences. Teachers are in the best position to know the children in their classroom and to determine the types of support that are likely to help children move forward in learning and development.

Effective teachers continually monitor children's understandings and abilities, and make moment-to-moment decisions about how to adapt teaching and interactions to better support children's learning in an activity or a conversation.[21] In the prior Example of Intentionality in Developmentally Appropriate Teaching, for example, a teacher can use children's responses to the two questions at the beginning of the activity to quickly and informally note children's understandings of counting. A teacher may decide to adjust the activity plan by encouraging children to count each finger on their hands if children seem hesitant or confused in their responses to the two questions.

ELM offers guidance designed to help classroom staff adapt activities in support of children's learning. Each activity plan includes scaffolding tips that can be used by staff to provide children with extra support or increased challenge as part of their participation in the activity. NAEYC's developmentally appropriate practice position statement emphasizes the importance of teachers having a solid repertoire of teaching strategies for responding to a range of child needs.[22] The scaffolding tips are suggestions for targeting teaching strategies to children's needs.

The curriculum includes efficient progress assessment procedures and child observation guidelines focused on foundation skills promoted in ELM. Each assessment procedure and observation guideline includes suggestions for follow-up learning plans that can be used to build on what a child or a small group of children already knows and is able to do. Details are offered in the Effective Use of ELM section of this *Guide*. Also, numerous suggestions of additional ways to promote children's learning and development are offered in the Areas Promoted by ELM section of this *Guide*.

At a more global level, ELM's focus on consequential skills for school and life success is likely to be viewed as meaningful among families and policy-makers who want children to have the best possible start in life and view early childhood education as a smart investment in society's future. Strengthening the alignment between pre-kindergarten and elementary school experiences and goals is of keen interest to many constituencies, including NAEYC.[23]

Plentiful

ELM is plentiful in the amount and quality of attention given to early childhood skills that bolster success in school and life. Content areas that are most strongly associated with school readiness—language/literacy and mathematics—are promoted in separate activities each day of the week. Self-regulation, social-emotional development, and understandings of the world around us are also promoted each day of the week. Science, creative expression, and physical/health areas receive generous and regular doses of support.

A focus on one skill or set of closely related skills in ELM activity plans helps children give full attention to important dimensions of a targeted skill. The Example of Intentionality in Developmentally Appropriate Teaching in the current section of this *Guide* shows a clear focus on sorting items into groups of the same type of item. Teaching strategies in this example pertain to sorting. Adding an unrelated element to this activity—such as inviting children to discuss how they could play with the items—might dilute or divert children's attention to the sorting goal.

ELM activity plans systematically review a concept, vocabulary word, or action soon after it is introduced. For example, the last day of the week includes a review of the math skill(s) introduced and practiced during the week, and aspects of a letter of the alphabet (sound, shape) are briefly reviewed most days of the week starting in Week 7. The reviews encourage active child participation, such as making a letter shape in the air.

Some reviews of a concept occur in an integrated connection to an activity in another area. For example, trees receive attention in a set of science activity plans focused on a forest habitat (Week 28). During the following week, traffic cones represent trees in a pretend forest created for physical/health activity plans focused on moving our bodies around obstacles.

Frequent practice of an emerging skill is particularly beneficial when the practice involves a new appropriate challenge. This *Guide*'s description of how ELM supports self-regulation (see Areas Promoted by ELM) recognizes that frequent practice is a proven way to master new skills but doing something repeatedly without added challenge is unlikely to promote important growth. This general principle is applied to all areas promoted by ELM.

Adding variation and challenge to the review and practice of an emerging skill is a highly regarded way to sustain children's interest and participation. Children who are actively engaged in learning are unlikely to wander aimlessly in a classroom or to act out. Importantly, adding variation and challenge to skill review and practice supports children's progress toward more advanced and complex skills.

ELM supplements skills promoted in large and small group sessions with suggested center activities that reinforce content offered in group sessions. In addition, each week ELM provides parenting tips that can be used by families to reinforce and extend content emphasized during the week in ELM classrooms.

There is ample opportunity within the ELM framework for teachers to pursue topics of special interest to children and families. Teachers make decisions about books to share with children as part of ELM's language/literacy activity plans, for example, and a number of activity plans offer options for the specific direction of a learning experience.

ELM is plentiful with supports for classroom staff and trainers. A rich and efficient set of resources is summarized in the Ready-to-Go Resources chart in this *Guide*.

Ready-to-Go ELM Resources

Classroom Supports
Comprehensive activity plans: 4 per day for 50 weeks
Manipulatives, pictures, and other printable classroom materials
Guides for Observing and Individualizing (focused on foundation skills)
Progress monitoring assessments and follow-up learning suggestions
Forms for planning and recording
ELM Snapshot of Child Progress: 3–5 Years
ELM Planning Form: Week of _____
Optional activity plans for repeated book readings
List of classroom materials used each week
Staff Training Supports
User Guide
ELM Activity Observation Checklist
Online trainings (3 for direct care staff, 3 for trainers)
Family Engagement Supports
Readiness Starts Early tips for supporting children's learning in families
What Children Will Learn This Week summaries of classroom learning
Examples of portfolio entries that describe a child's progress

ELM's Starting Points

The ELM Curriculum is the result of a five-year project initiated by the U.S. Department of Defense for the purpose of developing a comprehensive, evidence-informed curriculum and related training materials designed to bolster children's readiness for school. The project, known as the Curriculum Development Project for Early Care and Education, was conducted by Purdue University's Department of Human Development and Family Studies as part of the DoD-USDA Partnership for Military Families.[24]

In addition to specifying broad-based school readiness outcomes, DoD parameters for the curriculum included mixed-age classrooms for children 3–5 years of age; three age groupings for children from birth to 36 months of age;[25] inclusion of developmentally appropriate practices; and guidance for adapting a classroom-based curriculum for family child care homes.

Four major factors contributed to the curriculum's development. Each is described below.

Developmentally Appropriate Practice

The concept of developmentally appropriate practice is the dominant framework for best practice in programs of early care and education. The concept was developed by NAEYC in the mid-1980s[26] and subsequently revised in 1997,[27] 2009,[28] and 2020.[29] There are numerous references to the influence of the developmentally appropriate practice position statement and the program accreditation criteria of the NAEYC on ELM in this *Guide*'s description of key characteristics of ELM.[30]

The ELM Curriculum developers adhered to the most recent statements on developmentally appropriate practice (2009 and 2020) and program accreditation criteria (2019).[31] The concept of developmentally appropriate practice is sometimes used by early childhood professionals as "a shorthand term for the value of play or letting children be children," but this interpretation does not fully represent the present-day concept of developmentally appropriate practice.[32]

The original position statement on developmentally appropriate practice emphasized child-initiated play. Research and program experiences led to a rethinking and refinement of this emphasis in the 1997 revision of the developmentally appropriate practice statement. The 1997 revision indicates that children "benefit from engaging in self-initiated, spontaneous play and from teacher-planned and -structured activities."[33] This principle continues to be central to the current version of the position statement.

Guidance from Research Evidence and Experts

An extensive review of outcome research published in scholarly refereed journals was conducted to answer two questions:

- What early childhood skills are linked to later positive outcomes, particularly indicators of school readiness?
- What early childhood classroom practices significantly support the development of early childhood skills linked to later positive outcomes for children?

Answers to the first question were used to identify foundation skills promoted in the curriculum. Answers to the second question informed decisions about teaching practices and other learning experiences offered in the curriculum.

The literature review represented more than 230 research reports plus an additional 115 background readings. The review found uneven amounts of attention to different ages and content areas in early childhood. More is known about how to promote positive outcomes in the preschool-age years than in years spanning birth to 36 months. Research on strategies to improve children's language and literacy development is more extensive than studies

of how to promote children's growth in other areas. Summaries of research that influenced the curriculum's development are provided in the Areas Promoted by ELM section of this *Guide*.

Recognized experts in the care and education of young children and a range of stakeholders within and outside of the DoD Child Development Program were consulted at the outset of the project about needed directions in early childhood curricula, including curriculum training resources. Experts and early childhood stakeholders also provided feedback on ways to support family engagement in children's learning. Consultations with DoD Child Development Program leaders continued throughout the project.

Leading early childhood specialists served as content experts in the development of the curriculum's eight areas promoted for children 3–5 years of age and the five areas promoted for children birth–36 months. The content experts developed a sequenced plan for their respective area that specified practices for supporting the development of foundation skills over time. The sequenced plans for each area were used by curriculum specialists to develop detailed drafts of learning activity plans. The drafts of activity plans were reviewed by content experts, revised by curriculum specialists in response to feedback from content experts, and subjected to pilot testing as described below. Content experts also worked closely with curriculum specialists to revise activity plans in response to feedback from pilot sites. In addition, content experts contributed to the descriptions of areas promoted by ELM (see next major section of this *Guide*).

Pilot Testing

Twenty-four preschool-age classrooms across six child development centers in four military installations participated in a pilot implementation of the curriculum for a period totaling 44 weeks. Lead classroom staff provided feedback on their uses of activity plan drafts in telephone consultations with ELM Curriculum staff twice a month. They also wrote notes on activity plan drafts. Training and Curriculum Specialists provided feedback in weekly telephone consultations with ELM staff. Also, ELM Curriculum staff visited each pilot site three times during implementation (beginning, middle, end) to secure in-depth information. About 25% of activity plans were significantly revised or replaced on the basis of pilot feedback.

Trainers in pilot sites and program leaders provided feedback on drafts of ELM forms for weekly planning, recording children's progress, and classroom observations of activity plan use.

Staff Credentials and Turnover

ELM's resources were influenced by prevalent national patterns of considerable variability in the education and longevity of classroom staff. In 2012, less than one-half of teachers working with 3- to 5-year-old children in center-based settings had a bachelor's degree or higher.[34] There also is a relatively high staff turnover rate (about 30% nationally) in programs of early care and education.[35] Staff departures that occur mid-year and with limited advance notice may be particularly challenging for programs.

More generally, it is important to acknowledge NAEYC's observation that many teachers lack the current knowledge and skills needed to provide high-quality learning experiences for young children, at least in some areas of a curriculum. In addition, NAEYC notes that even well-qualified teachers find it challenging to create from scratch a comprehensive curriculum that addresses all important standards, learning goals, and assessment procedures.[36]

These patterns influenced the curriculum project's development of user-friendly resources that include models of high-quality implementation of activity plans. The provisions are described in the Effective Use of ELM section of this *Guide*.

Endnotes

1 National Association for the Education of Young Children. (2020). *Developmentally Appropriate Practice: A Position Statement of the National Association for the Education of Young Children*. Washington, DC: Author.
2 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items*. Washington, DC: Author.
3 Blair, C. (2002). School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist*, *57*, 111–127.
4 These five developmental areas are included in the U.S. Department of Defense goal of school readiness for its Child Development Program. Department of Defense. (2014). *Department of Defense Instruction* (Number 6060.02).Washington, DC: U.S. Government Printing Office.
5 Weiland, C., & Yoshikawa, H. (2013). Impacts of a prekindergarten program on children's mathematics, language, literacy, executive function, and emotional skills. *Child Development*, *84*, 2112–2130.
6 Copple, C., & Bredekamp, S. (2009). To be an excellent teacher. In C. Copple & S. Bredekamp (Eds.), *Developmentally appropriate practice in early childhood programs: Serving children from birth through age 8*, *3rd ed.* (pp. 33–50). Washington, DC: National Association for the Education of Young Children.
7 Epstein, A. S. (2014). *The intentional teacher: Choosing the best strategies for young children's learning, revised edition.* Washington, DC: National Association for the Education of Young Children.
8 National Association for the Education of Young Children (2019).
9 Schmitt, S. A., Geldhof, G. J., Purpura, D. J., Duncan, R., & McClelland, M. M. (2017). Examining the relations between executive function, math, and literacy during the transition to kindergarten: A multi-analytic approach. *Journal of Educational Psychology*, *109*, 1120–1140.
10 Cameron, C. E., Cottone E. A., Murrah, W. M., and Grissmer, D. W. (2016). How are motor skills linked to children's school performance and academic achievement? *Child Development Perspectives, 10*, 93–98.
11 National Association for the Education of Young Children (2019).
12 Burchinal, M., Zaslow, M., & Tarullo, L. (2016). Quality thresholds, features, and dosage in early care and education: Secondary data analyses of child outcomes. *Monographs of the Society for Research in Child Development*, *81,* 1–128.
13 National Association for the Education of Young Children (2020).
14 Wasik, B. (2008). When fewer is more: Small groups in early childhood classrooms. *Early Childhood Education Journal*, *35*, 515–512.
15 Cabell, S. Q., DeCoster, J., LoCasale-Crouch, J., Hamre, B. K., & Pianta, R. C. (2013). Variation in the effectiveness of instructional interactions across preschool classroom settings and learning activities. *Early Childhood Research Quarterly*, *28*, 820–830.
16 Trawick-Smith, J. (2012). Teacher-child play interactions to achieve learning outcomes. In R. B. Pianta, W. S. Barnett, L. M. Justice, & S. M. Sheridan (Eds.), *Handbook of early childhood education* (pp. 259–277). New York: Guilford.
17 National Association for the Education of Young Children (2020).
18 Graue, E., Clements, M. A., Reynolds, A. J., & Niles, M. D. (2004). More than teacher directed or child initiated: Preschool curriculum type, parent involvement, and children's outcomes in the child-parent centers. *Education Policy Analysis Archives*, *12*, 1–40.
19 Fuligni, A. S., Howes, C., Huang, Y., Hong, S. S., & Lara-Cinisomo, S. (2012). Activity settings and daily routines in preschool classrooms: Diverse experiences in early learning settings for low-income children. *Early Childhood Research Quarterly*, *27*, 198–209.
20 Chien, N. C., Howes, C., Burchinal, M., Pianta, R. C., Ritchie, S., Bryant, D. M., … Barbarin, O. A. (2010). Children's classroom engagement and school readiness gains in prekindergarten. *Child Development, 81,* 1534–1549.
21 National Association for the Education of Young Children (2020).
22 National Association for the Education of Young Children (2020).
23 National Association for the Education of Young Children (2020).

24 The project was supported by the U.S. Department of Defense Child Care Curriculum Competitive Program of the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA), grant number 2013-48762-21537.

25 Birth–12 months, 12–24 months, 24–36 months
26 Bredekamp, S. (1987). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8*, *expanded edition.* Washington, DC: National Association for the Education of Young Children.
27 Bredekamp, S., & Copple, C. (1997*). Developmentally appropriate practice in early childhood* programs, revised edition. Washington, DC: National Association for the Education of Young Children.

28 Copple, C., & Bredekamp, S. (Eds.) (2009). *Developmentally appropriate practice in early childhood programs, third edition.* Washington, DC: National Association for the Education of Young Children.
29 National Association for the Education of Young Children (2020).
30 In addition to NAEYC program accreditation standards, ELM's foundation skills were reviewed in relation to the early learning standards of 13 states with 10 or more child development centers on military installations. The review found strong alignment between ELM foundation skills and the state early learning standards.
31 National Association for the Education of Young Children (2019).
32 Bredekamp, S. (2014). *Effective practices in early childhood education: Building a foundation, second edition*. New York, NY: Pearson.
33 Bredekamp & Copple (1997).
34 Institute of Medicine (IOM) and National Research Council (NRC) (2015). *Transforming the workforce for children birth through age 8: A unifying foundation.* Washington, DC: The National Academies Press. See also: National Survey of Early Care and Education (NSECE). 2011. *Center-based provider questionnaire.* Washington, DC: Office of Planning, Research, and Evaluation; Administration for Children and Families; U.S. Department of Health and Human Services.
35 Whitebook, M. (2014). *Building a skilled teacher workforce: Shared and divergent challenges in early care and education and in grades k–12.* Berkeley, CA: Institute for Research on Labor and Employment, University of California, Berkeley. See also: Institute of Medicine (IOM) and National Research Council (NRC) (2015).
36 See page 6 of National Association for the Education of Young Children. (2009). *NAEYC position statement: Developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, DC: Author.
37 National Association for the Education of Young Children (2020).
38 Copple & Bredekamp (2009).
39 Blewitt, P., Rump, K. M., Shealy, S. E., & Cook, S. A. (2009). Shared book reading: When and how questions affect young children's word learning. *Journal of Educational Psychology*, *101*, 294–304.

Language/Literacy

3–5 Years

Experts have long recognized that the foundations of reading and related abilities develop early, well before formal instruction in reading.[1] A growing set of recent studies points to code-focused and meaning-focused skills as early building blocks of later reading and school success.[2]

Code-focused skills enable children to decode letters into sounds and then link the sounds to single words.[3] Phonological awareness, alphabet knowledge, and beginning writing competence contribute to this process. Preschool children's phonological awareness and alphabet knowledge are consistent predictors of reading comprehension and related skills at the end of kindergarten or later.[4] The ability to write letters in isolation on request or to write one's own name is predictive of later reading competence.[5]

Meaning-focused skills are central to understanding and using oral language. Vocabulary knowledge is an especially important part of language competence. The size of children's vocabularies in the early years is linked to reading comprehension some 10 years later.[6] What is more, children who know more words in the early years have a major advantage in learning new words.[7]

Experts support the common practice of introducing children to the purposes and conventions of print.[8] These practices include helping children understand how words form sentences, the orientation for reading text (from left to right in English), the role of a book's author and illustrator, and pointing out print in the classroom, such as labels on centers or objects. Studies indicate that explicitly drawing children's attention to print contributes to children's literacy skills, including alphabet knowledge.[9]

Foundation Skills

- Phonological awareness
- Letter knowledge
- Oral language
- Print knowledge
- Writing

Providing books, writing tools, posters with print, printed labels on classroom items, regular book readings, and other forms of exposure to words is a good first step in promoting language and literacy development. Yet solid preparation for later reading competence requires more than ensuring access to literacy items and language experiences in the early childhood years.

Research evidence indicates that young children benefit from intentional teaching of phonological awareness, alphabet knowledge, and vocabulary knowledge. Children make greater gains in vocabulary knowledge, for example, when they hear and talk about child-friendly definitions of unfamiliar words.[10] Evidence also suggests that children's code-focused skills are stronger when they are explicitly introduced to phonological awareness and alphabet knowledge at the same time.[11]

NAEYC Accreditation. Language and literacy development receives important attention in the National Association for the Education of Young

Children (NAEYC) early childhood program standards and accreditation criteria.[12] Early childhood programs are expected to provide multiple and varied opportunities for children to develop phonological awareness, including recognizing and producing words that have the same beginning and ending sounds. Programs also are to promote children's understanding of alphabet letters and letter sounds and provide opportunities for children's active engagement with print, including writing letters of the alphabet and words on their own. Programs are to support children's vocabulary knowledge. Books are to be read in an engaging manner that includes conversations aimed at helping children understand the content of a book.

Link to VLS. The Virtual Lab School's course on Preschool Communication and Language Development offers information on a range of language and literacy topics.[13] These include phonological awareness (Lessons 1, 2, 4), alphabet knowledge (Lessons 2 and 4), uses of books (Lessons 2, 3, 4), and print knowledge (Lesson 4).

How ELM Promotes Language and Literacy Development

ELM offers five days of language/literacy activity plans for each week. Code-focused skills are promoted on Days 2 and 4. Generally, a small group is used on Day 2 to facilitate children's participation and understanding of key concepts.

Meaning-focused skills are promoted on Days 1, 3, and 5, with repeated reading of the same book. The payoffs of repeated reading and the curriculum's shared reading approach are significant (see Understanding Words).

Understanding Sounds

ELM follows a developmental progression in children's awareness of the sounds in spoken words, moving from larger to smaller units of sounds in words.[14] The chart on the next page describes the units of sound promoted in the curriculum.

The curriculum follows a developmental progression in children's awareness of the sounds in spoken words.

A series of **listening games** is offered in Weeks 1–3 to heighten children's attention to common sounds, such as clearing a throat, closing a door, and turning pages of a book. The games also involve the identification of quieter and louder sounds. A slight increase in the challenge of the games occurs in Weeks 2 and 3 when children are encouraged to identify a sequence of two sounds.

Major chunks of sounds in words are introduced in a sequence of activity plans focused on **rhyming words, compound words, syllables,** and **initial sounds** beginning in Week 4. Active learning strategies include:

- identifying and saying units of sound
- using picture/word cards to form (blend) and take apart (segment) compound words
- clapping syllables in children's names
- using "robot talk" to segment syllables in words
- segmenting syllables in words as children hop for each syllable
- identifying the initial (beginning) sounds of children's names
- singing a song that emphasizes initial sounds of words

ELM introduces children to identifying and manipulating small units of sound beginning in Week 24. One-syllable words are used to help children listen to and focus on initial and ending sounds of words. The technical terms for the

blending and segmenting (decoding) activities are **body-coda** and **onset-rime**.

The activities in Weeks 24–25 focus on body-coda. Children are encouraged to blend the two initial sounds (body) with the ending sounds (coda). Here is an example: swee-t. The learning activities in Weeks 27–29 focus on onset-rime. Children are encouraged to blend the initial sound (onset) with the remaining sounds (rime). Activities include a guessing game, riddles, and making new words by changing the onset (example: p-ig becomes w-ig).

Children generally find it easier to do body-coda blending than onset-rime blending. For this reason, body-coda is introduced before onset-rime.[15] Although ELM focuses on blending skills in these activities, attention is given to onset-rime segmenting in Week 31 (example: b-all).

Support for identifying and manipulating small units of sound also includes the **final sound** of one-syllable words. This occurs in Weeks 33–34. Activities include games in which children identify the final sound and match words that end with the same sound (phoneme). Examples: bi<u>b</u> and we<u>b</u>.

The content on small units of sound beginning in Week 24 may be too challenging for some children, particularly children who need additional support for identifying initial sounds (assessed in Week 23). Some children may benefit from continued and varied practice with larger units of sound (compound words, syllables, initial sounds). The progress assessment plan for Week 23 offers planning suggestions.

Technical terms, such as initial sounds and final sounds, are included in activity plans for communicating with staff, but are not introduced to children. There is a similar arrangement for technical terms in mathematics, as described in the Mathematics section of this *Guide*.

Understanding Letters

ELM introduces letters of the alphabet in the context of children's experiences. For each letter, children are invited to:

- search for the letter in the child's first name and another child's name;
- identify the name of several pictured items that begin with the letter;
- find the letter in the classroom;
- think of other words that begin with the letter;
- connect the letter to the first letter of a word emphasized in other learning activities

Units of Word Sounds Promoted by ELM

Sound	Definition	Example
Rhyming Words	Words that sound alike at the end of the word	B-at and C-at (Week 4, Day 2)
Compound Word	Combining two words to make a new word	Foot-ball (Week 8, Day 2)
Syllables	Parts or "chunks" of a word	Ma • de • line (Week 13, Day 2)
Initial Sound	Beginning sound of a word	/h/, /h/, /h/, /h/, Hunter (Week 17, Day 2)
Body-coda*	Beginning sound with the vowel (body) + the letter(s) that follow (coda) in a word	Ha-t (Week 24, Day 2)
Onset-rime*	Beginning sound (onset) + string of letters that follow (rime) in a word	F-ox (Week 28, Day 2)
Final Sound*	Ending sound of a word	Be<u>d</u> (Week 33, Day 2)

*For children who are ready to learn this advanced skill

during or near the week the letter is introduced;

- learn the letter's name, sound, and shape (both uppercase and lowercase);
- write as much of the letter as possible with the help of a letter card.

Studies support the process described above. Not surprisingly, research suggests that children tend to focus on letters in their own name when beginning to use letters in their writing[16] and in learning letter names.[17] Studies indicate that teaching letter names and sounds together is more beneficial than teaching letter names and sounds separately.[18] Recent research also suggests that young children benefit from using a memory aid, such as a key word, to help them remember letters and their sounds.[19] When the letter C is introduced in ELM, it is linked to the word "creative," which is introduced and emphasized during the same week in Creative Expression learning activities.

Letters that children learn most readily are introduced first in ELM. The easiest letters for children to learn include the letter O and the first letter of their name.[20] The letters B, A, C, and X are also introduced early in the curriculum because they are among the letters that appear easiest for young children to learn. The letters U and V are the most difficult for children to learn; they are introduced at the end of ELM's introduction of letters.

Letters are defined for children as "special marks used to make words." The opportunity for children to write a letter in their letter journal is intended as a low-key experience in which any attempt at writing is accepted. Activity plans consistently describe and demonstrate two ways to write a letter—uppercase and lowercase—and explain that an uppercase (big) letter is used at the beginning of a name. A letter's case is not a major focus of instruction in ELM, however. The emphasis is on helping children learn the letter name and sound associated with the corresponding letter form.

It is important to keep a neatly-printed list of the first names of children in the classroom on the wall where group activities are held. This list is used repeatedly in the curriculum to help children identify letters.

In the activity plans, uppercase is used to refer to a letter's name. The reference to a letter's sound appears in brackets. Example: /b/.

Pre-kindergarten children need to know more than the letters in their name or in the names of relatives and friends in order to be well prepared for later reading. Successfully decoding letters into sounds and then linking sounds to single words requires knowledge of many different letters.

How many letters should children know when they leave a preschool program? A recent study suggests that the ability to identify 18 uppercase letters and 15 lowercase letters at the end of a preschool program is an optimal benchmark for predicting first-grade literacy achievement.[21] The research involved children enrolled in public preschool programs serving socioeconomically disadvantaged populations.

The ability to identify 18 uppercase letters and 15 lowercase letters at the end of a preschool program is an optimal benchmark for predicting first-grade literacy achievement.

ELM introduces the common sound of a letter. It could be confusing to preschool-age children to systematically introduce all of the sounds a single letter could make. The activity plans for teaching the sound of a letter include a scaffolding tip on how to respond to children who indicate that a letter sounds differently in their name or someone else's name (for an example, see Week 8, Day 4 third Enrichment tip for the letter C).

ELM teaches **short vowel sounds**. Some research suggests that short vowels are more useful for children's early efforts in spelling, perhaps because

it can be initially confusing for children when letter names and sounds are the same.[22] Short vowels were used in an effective program for teaching letters and their sounds,[23] and also are used in some popular commercially-available letter instruction programs for preschool-age children. Use a long vowel sound if the target letter in a child's name is said with a long vowel.

One letter is introduced each week beginning in Week 7. Approximately every sixth week there is a review of the 3–5 letters most recently introduced. Brief support for remembering the name, shape, and sound of a letter is offered at the beginning of each book reading session (Days 1, 3, 5) beginning in Week 8. A review of letters begins in Week 46, focused on letters that an individual letter knowledge assessment in Week 43 suggests would be helpful for children to review.

Understanding Words

ELM supports children's understanding and use of oral language for varied purposes, including:

- following directions;
- labeling objects, people, and events;
- describing observations, understandings, and ideas;
- engaging in give-and-take conversation;
- understanding, comprehending, and interpreting a short book or passage read aloud.

The curriculum uses a **shared book reading** approach to encourage active child engagement of a book's text and illustrations. The adult who reads a book with children draws attention to words and pictures, sometimes by asking children to point to something on the page of a book. The reader also promotes discussion of information presented in the book by asking questions about characters or the sequence of events in the book, how book information connects to children's own experiences, and children's interpretations of book characters, events, or other information. There is a strong research base for a shared book reading approach.[24]

Repeated Reading. As part of shared book reading with children, ELM uses repeated reading of the same book to strengthen the benefits of shared book reading, including the opportunity for children to be more actively involved in the reading experience. It may seem unnecessary to read any book to young children more than one time. But there are good reasons to read a book several times over a week or relatively short time period.[25] As children listen to a book being read again, the words, phrases, and illustrations become more familiar and predictable. Children learn more about the book content as they listen to it being read and reread. Once children know what will happen in a book, they begin to think and talk about the characters and why events may have occurred as they did.[26] It is easier for children to analyze a book when they are familiar with a book's plot and characters and do not need to work hard to remember what happens in the story.

Children also learn new vocabulary words from listening to and talking about a book that is read several times. Children are more likely to learn new words from repeated readings of the same book than when they hear the same new words used in different books. We do not know exactly why this happens, but one possibility is that children know what will happen in a book read several times and pay more attention to new features in the book. This includes paying attention to, and learning, the meanings of new words.[27]

Repeated reading of the same book promotes stronger vocabulary skills and comprehension than does reading a book one time.

Each repeated reading of a book involves children in the reading process in different ways.

Challenge is gradually increased across the three readings. In the first reading of a book, for example, the reader is encouraged to focus on the book's text and illustrations so children can concentrate on the book information. See the chart below for a description of what is emphasized in each reading. Activity plans for each of the readings are offered beginning in Week 3.

The third reading of a book focuses on children's reasoning about and explanations for why events may have happened as they did. This type of discussion may be particularly difficult for younger children or children who are not fluent English speakers. Below are some strategies you can use to help all children analyze a story:[28]

- Make comments about what a character may be thinking or feeling as you read.
- Ask questions directly related to your comments.
- Connect elements of the book to children's own experiences.
- Ask children to talk about what is happening by focusing on the illustrations.
- Follow up children's comments by inviting them to say more.

Not all books written for young children are well suited for repeated reading and discussion.

Not all books written for young children are well suited for repeated reading and discussion. There are excellent books that focus on literacy skills, such as alphabet knowledge (example: *Chicka Chicka Boom Boom* by Martin and Archambault) and predictable phrases (example: *Brown Bear, Brown Bear* by Martin and Carle). These types of books are often favorites of young children, but they do not work well for talking about events or characters because both the characters and plot are simple. There is little to discuss.

Sophisticated picture books are often good options for repeated reading. They typically encourage children to think about a character's reason for behaving in a particular way and also include rich vocabulary, some of it unfamiliar to young children. Examples: *Stellaluna* (Cannon), *The Mitten* (Brett), *The Kissing Hand* (Penn).

Below are some guidelines for selecting books for repeated reading. A book is a good option for

Gradual Challenge in Sequenced Conversations about the Same Book

1st Reading (Day 1)

- Focus: Children's understanding of the book's basic information
- Conversation supports: Questions to promote recall. Example: What is our book about?

2nd Reading (Day 3)

- Focus: Children's comprehension of the book's information
- Conversation supports: Questions to promote recall and connections to children's experiences. Example: Have you ever seen or touched a worm?

3rd Reading (Day 5)

- Focus: Children's interpretations (explanations, reasoning) of the book's information
- Conversation supports: Questions to promote recall and higher-level thinking, such as why and how certain things happened. Example: Why did the animals want to get inside the mitten Nicki lost? How do you think they all managed to get in?

rereading and discussing when you can answer "yes" to all or most of the following questions.

- Does the book tell a connected story in which one event is directly related to the other? (non-fiction books can also tell a story)
- Does the character (or characters) behave in a way that would lead children to think about why they did what they did?
- Is the vocabulary appropriate and rich?
- Will children be able to relate what happens in the book to their own lives?

ELM also offers a small collection of activity plans for the repeated reading of selected books. The book-specific plans identify novel words, offer child-friendly definitions of novel words, and include book-specific questions to explore with children in discussions of the book. Use of these plans is optional. Even if not used, the book-specific plans offer additional examples of recommended practices in shared book reading, including definitions of novel words used in the selected books. The plans are located in a separate file. The plans include some books suggested in a resource for multicultural education for young children.[29]

The repeated book-reading arrangement, beginning in Week 3, is modified beginning in Week 46, which likely falls during a period of fluctuating attendance in some classrooms. For Weeks 46–50, a staff-selected book is read twice (on Days 1 and 3) and a different staff-selected book is read on Day 5. The learning goals focus on understanding basic information in the book, including the meaning of novel words.

Vocabulary Knowledge. The curriculum's activity plans for shared book reading provide concrete guidance on how to **explicitly teach the meaning of novel (unfamiliar) words**. Studies consistently indicate that shared book reading promotes the growth of children's oral language skills.[30] Books provide a strong opportunity to build children's vocabularies because a book's text offers a shared context for discussing the meaning of an unfamiliar word or concept.

The activity plans include child-friendly definitions of words that are likely to be unfamiliar to most children. Often there is not enough information in a book's text or pictures for children to accurately figure out the meaning of a novel word on their own. It also can be challenging for young children to fully detect a novel word that occurs within a stream of words. Research suggests that young children benefit from hearing brief descriptions of novel words used in a book.[31] This

What Words Should Be Taught to Preschool-Age Children?

- Select unfamiliar words that children are likely to encounter in books and conversations because the words are used frequently by mature users of language.[39] Avoid highly technical or specialized words unless they are part of a topic being introduced to children.
- Give priority to words that children can easily practice through everyday use in the classroom, with their families, and in communities. Children understand and use words that are part of meaningful situations.
- Select words that represent a concept children may already understand. For example, teach the word *beautiful* to children who understand the word *pretty*. This broadens the range of words children can use to discuss or describe something.
- Help children understand basic prepositions, such as *between*, *below*, *on*, *after*, *for*, *in*, *be*, *next*, *during*. These words help children understand a request or direction, such as "stand next to Jonah."

seems especially important in reading storybooks because a fiction book's purpose is to tell a story, not teach a new word.

Different novel words are defined and discussed on each of the three days of repeated reading of the same book beginning in Week 3 (see Days 1, 3, 5). For the first reading of a book, novel words that are essential to understanding the book are defined prior to reading the book without interruption. Experience suggests that children do not like interruptions during the first reading of a book,[32] perhaps because they are working hard to make sense of basic information presented in the book. During the second and third reading of the same book, the activity plan suggests the reader pause briefly to define novel words as the words appear in the book.

The word-teaching strategies also include:

- drawing attention to how the word is used in the book
- reviewing novel words on subsequent days
- the staff member writing and restating each novel word on a chart
- promoting children's understandings of a new word by
    - asking children to describe a picture related to the word
    - defining a word without naming it and then asking children to say the word
    - encouraging children to think about a novel word in another context

The box on the previous page summarizes experts' suggestions on how to identify novel words for introduction to children. The general guidance is to teach words that most children are unlikely to understand even though some children may know the words. Children's dictionaries offer good help in developing child-friendly definitions. One resource is *MacMillan's First Dictionary* (Simon & Schuster). Currently there is not an expert-developed list of words that all preschool-age children should know. There also is not research information on the optimal number of novel words to teach in a session.

Classroom staff are encouraged to read information books (non-fiction) with children in addition to storybooks (fiction). Research shows that the type of book read with children influences the type of talk that occurs between adult and children.[33] Storybooks can lead to conversations about book characters, sequence of events, and ideas about why certain things may have happened. Information books can promote discussion of a topic's characteristics (such as the six legs of an insect) and knowledge of words that are more technical in nature (such as *observation* and *experiment*).

Print Knowledge

Attention to print knowledge is incorporated into many activities across different domains. The goals are to help children understand:

- differences between writing and drawing
- words form sentences
- words serve as labels and as titles of books and charts
- the orientation for reading text, including where to begin and movement from left to right in English
- the roles of a book's author and illustrator

There are activity plans for introducing how books work, including cover, title, author, illustrator, where to begin reading, and differences between words and illustrations (Week 1, Day 3). Activities describe and demonstrate how words form sentences and what sentences look like (Week 7, Days 2 and 4). There also are activity plans for helping children understand how to properly care for books (Week 1, Days 4 and 5). In addition, there is a two-week focus on how children's authors, Eric

Carle and Janell Cannon, wrote and illustrated some of their famous books (Weeks 44 and 45).

Writing

The curriculum uses writing to reinforce children's understanding of letters, sounds and words, and to promote further growth in children's fine-motor skills. Studies indicate that preschool children's writing skills are positively associated with letter knowledge and awareness of the initial sounds of words.[34]

Researchers have documented a typical progression in children's writing development that begins with scribbles and eventually moves to forming letters.[35] Experts urge adults to accept all forms of children's writing, including scribbles, scribble writing, and letter-like shapes.[36] **The curriculum includes frequent, supportive opportunities for children to practice writing without an emphasis on correct letter formation**. The curriculum does not approach writing as an early introduction to penmanship or techniques of writing.

Experts urge adults to accept all forms of children's writing.

Writing is a central part of activities and center activities included in many activity plans. In addition, activity plans regularly involve classroom staff modeling writing for children with charts and dictation. Staff are encouraged to draw children's attention to how the spoken word can become print when modeling writing.

Everyday use of sign-in sheets for program attendance and participation in centers is recommended (see More Ways for Promoting Language and Literacy). Frequent opportunities

Tarynn writes her name at 3 years, 8 months. Note the recognizable letters **T**, **a**, and **n**.

to observe and practice writing help children distinguish writing from drawing, strengthen their understanding of letters and the spelling of their name, and understand beginning and ending sounds in words.[37]

Integration with Other Areas

Many activity plans suggest a specific book that can be used to supplement an activity (see Optional Reading in the box on the left side of an activity plan). Many plans also include book reading as a central part of an activity. For example, books are used to support children's understanding of counting and other math concepts; relationship skills, such as being kind to others; different emotions; and individual and family diversity. Book sharings typically include child-friendly definitions of novel words related to the book's content plus opportunities to strengthen knowledge of how books work.

Novel words are introduced in numerous activity plans. The plans sometimes suggest that children say the word, typically with an emphasis on the spoken syllables. The plans also encourage staff to demonstrate writing by recording information on charts and adding information to children's drawings and other work. In addition, a majority of activities include conversations designed to promote children's comprehension and use of language.

Building on the Activity Plans

More Practices for Promoting Language and Literacy

Teaching Practices

- Establish a routine of children signing in for program attendance or signing up for a center or job on the job chart.
- Encourage children to write their names on their work.
- Provide regular opportunities (at least once or twice a week) for children to write and draw in their journals. Writing topics might include writing/drawing an idea from a book or an experience during a field trip.
- Provide meaningful reasons for children to write, such as writing a note to a parent or peer.
- Promote give-and-take conversations with individuals or groups of children by using open-ended questions focused on children's interests or comments. Repeat and slightly expand on children's statements. Look expectantly and show other signs of genuine interest in children's comments.[38]

How a Morning Message Supports Many Language and Literacy Skills

The Morning Message is a common part of the first circle time in many early childhood classrooms. Usually the staff member writes one or two simple sentences that provide information about what will happen during the day or something that recently happened in the classroom. Examples: Yesterday we watered our bean seeds. Today we will work on our shoebox houses.

The following practices strengthen the learning benefits of the Morning Message:[40]

- Write the message in front of children so they can watch the formation of letters and words. Say the names of letters children are now learning, and point to and say each word. Emphasize the beginning sounds of words as you write them.
- Try to include a word recently introduced to children. Remind children of the meaning of the word.
- Use short, straightforward sentences. Limit the message to five or six words while children are learning about letters, words, and sentences.
- Ask children to find in the Morning Message a letter they are learning or a letter that appears in their name. Encourage children to say the letter sound.
- Focus on the meaning of the Morning Message by encouraging children to talk about the message's main topic. Examples: How did we water our bean seeds? Why is it important to put water on our bean seeds?
- Invite children to contribute to the development of the Morning Message when their understanding of how to form a sentence is reasonably firm. Example: Let's write a Morning Message today about how we worked with magnets yesterday. What should we say about our magnets? (Note how this invitation draws attention to the concepts of *today* and *yesterday*, and promotes recall and use of oral language.)

- Record children's ideas by writing during group and individual activities (examples: writing words that start with a particular letter, writing a child's description on a drawing).
- Use routine activities, such as mealtimes, to further discuss children's ideas about the day's activities and reinforce children's use of new words in conversation.
- Use transition activities as an opportunity for children to respond to questions (example: What did you see on the way to our center today?), as a way to reinforce understanding of letters and sounds (examples: What letter is this? What sound does it make?), and as a way to reinforce the meanings of new words (example: I'm thinking of a word that means small or little; it starts with /t/).
- Use outdoor time to practice literacy skills children are learning. For example, road signs, such as "Stop" and "Curve," can be added to a bike path. Signage provides a way to talk about letters and sounds as children learn to recognize familiar words. Playing the game *I Spy* offers opportunities to reinforce letters and sounds (example: I spy something that flies in the air and sings songs. It's a /b/-/b/-/b/ . . . Yes, it's a bird!).

Classroom Arrangements

- In one or more highly visible locations, put a high-quality alphabet chart along with laminated cards with one letter each (uppercase and lowercase forms). Provide templates that help children form letters, such as alphabet stencils, sandpaper letters, and rubber stamps. Provide laminated cards with children's names and other familiar words.
- Provide a distinct area for writing that is not used for other purposes. Include varieties of paper and writing tools, such as pencils, markers, colored pencils, chalk, and a whiteboard. Include one or more alphabet books in the writing area.
- Provide writing materials in key areas, such as dramatic play (examples: order pads for a restaurant, prescription pads for a doctor's office).
- Display children's writing attempts in the classroom.
- Provide a wide range of books and other texts, including information books and storybooks that range in level of difficulty and topic. Include books related to children's backgrounds, cultural experiences, and interests. Include books on topics children are currently exploring in the classroom and books made by children. Include recorded books.
- Prominently display books in accessible spots in a variety of classroom areas, such as science, dramatic play, and block areas.
- Place books in an orderly and inviting arrangement. Include comfortable furniture in the book area. Locate the book area away from areas that involve higher levels of traffic, movement, and talk.
- Display posters and charts with text, such as labeled pictures from a recent field trip or classroom visitor. Display staff dictation on children's work.
- Provide alphabet puzzles and puzzles with words.

Strengthening Your Understanding of Language and Literacy

Here are some suggestions for reflecting on the curriculum's recommended practices for promoting children's language and literacy development.

- Have you ever read an article or book more than once (or wish you had read something more than once)? Why do you think research shows that rereading the same book has big payoffs for young children?
- Studies show that young children benefit from intentional teaching of phonological awareness,

alphabet knowledge, and vocabulary knowledge. In addition to using the activity plans, what are some ways you can actively support children's language and literacy skill development?

- Use the "More Practices for Promoting Language and Literacy" list to take stock of your classroom's teaching practices and physical arrangements. Are there suggestions you would like to implement or bolster in your classroom?
- The curriculum's progress assessment procedures include follow-up learning suggestions based on a child's level of understanding. Take a look at the follow-up suggestions in Week 11, Day 2 for supporting children's understanding of compound words. How might the "Reinforce" and "Reintroduce" suggestions be helpful to children at different levels of understanding of compound words?
- Select an activity plan in any of the curriculum's seven other preschool-age domains that also promotes language/literacy (look for Also Promotes in the left column of the first page of the activity plan). In what ways does the plan you selected promote children's code-focused or meaning-focused skills?

Endnotes

1 Teale, W. H., & Sulzby, E. (Eds.). (1986). *Emergent literacy: Writing and reading.* Norwood, NJ: Ablex.
2 Powell, D. R., & Diamond, K. E. (2012). Promoting early literacy and language development. In R. C. Pianta, W. S. Barnett, L. M. Justice, & S. M. Sheridan (Eds.), *Handbook of early childhood education* (pp. 194–216). New York: Guilford.
3 Whitehurst, G. J., Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development,* 69, 848–872.
4 National Early Literacy Panel (2008). *Developing early literacy: Report of the National Early Literacy Panel.* Washington, DC: National Institute for Literacy. See also: Shanahan, T., & Lonigan, C. J. (Eds.). (2013). *Early childhood literacy: The National Early Literacy Panel and beyond.* Baltimore, MD: Brookes.
5 National Early Literacy Panel (2008).
6 Cunningham, A. E., & Stanovich, K. E. (1997). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology*, *33*, 934–945.
7 Stanovich, K. E. (1986). Matthew effects in reading: some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, *21*, 360–407.
8 Shanahan & Lonigan (2013).
9 Piasta, S. B., Justice, L. M., McGinty, A., & Kaderavek, J. N. (2012). Increasing young children's contact with print during shared reading: Longitudinal effects on literacy achievement. *Child Development*, *83*, 810–820. See also: Justice, L. M., Kaderavek, J. N., Fan, X., Sofka, A., & Hunt, A. (2009). Accelerating preschoolers' early literacy development through classroom-based teacher-child storybook reading and explicit print referencing. *Language, Speech, and Hearing Services in Schools*, *40*, 67–85.
10 Marulis, L. M., & Neuman, S. B. (2010). The effects of vocabulary intervention on young children's word learning: A meta-analysis. *Review of Educational Research*, *80*, 300–335.

11 Phillips, B. M., & Piasta, S. B. (2013). Phonological awareness and alphabet knowledge: Key precursors and instructional targets to promote reading success. In T. Shanahan & C. J. Lonigan (Eds)., *Early childhood literacy: The National Early Literacy Panel and beyond* (pp. 95–116). Baltimore, MD: Brookes.
12 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items.* Washington, DC: Author.
13 www.virtuallabschool.org/preschool/comm-lang-development
14 Phillips, B. M., Clancy-Menchetti, J., & Lonigan, C. J. (2008). Successful phonological awareness instruction with preschool children: Lessons from the classroom. *Topics in Early Childhood Special Education*, *28*, 3–17.
15 Murray, B. (n.d.). Tuning in to the sounds and words. Retrieved from http://www.readingrockets.org/article/tuning-sounds-words
16 Bloodgood, J. W. (1999). What's in a name? Children's name writing and literacy acquisition. *Reading Research Quarterly*, *34*, 342–367.
17 Treiman, R., & Broderick, V. (1998). What's in a name: Children's knowledge about letters in their own names. *Journal of Experimental Child Psychology*, *70*, 97–116
18 Piasta, S. B., & Wagner, R. K. (2010a). Learning letter names and sounds: Effects of instruction, letter type, and phonological processing skill. *Journal of Experimental Child Psychology*, *105*, 324–344. See also: Piasta, S. B., & Wagner, R. K. (2010b). Developing early literacy skills: A meta-analysis of alphabet learning and instruction. *Reading Research Quarterly*, *45*, 8–38.
19 Piasta & Wagner (2010a).
20 Piasta, S. B. (2014). Moving to assessment-guided differentiated instruction to support young children's alphabet knowledge. *The Reading Teacher*, *68*, 202–211.
21 Piasta, S. B., Petscher, Y., & Justice, L. M. (2012). How many letters should preschoolers in public programs know? The diagnostic efficiency of various preschool letter-naming benchmarks for predicting first-grade literacy achievement. *Journal of Educational Psychology*, *104*, 915–958.
22 Treiman, R., Stothard, S. E., & Snowling, M. J. (2013). Instruction matters: Spelling of vowels by children in England and the US. *Reading and Writing*, *26*, 473–487.
23 Piasta & Wagner (2010a).
24 U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse (2015, April). *Early childhood education intervention report: Shared book reading* (ED-IES-13-C-0010). Retrieved from http://whatworks.ed.gov
25 Sénéchal, M. (1997). The differential effect of storybook reading on preschoolers' acquisition of expressive and receptive vocabulary. *Journal of Child Language*, *24*, 123–138. See also: Penno, J. F., Wilkinson, I. A. G., & Moore, D. W. (2002). Vocabulary acquisition from teacher explanation and repeated listening to stories: Do they overcome the Matthew effect? *Journal of Educational Psychology*, *94*, 23–33. Biemiller, A., & Boote, C. (2006). An effective method for building meaning vocabulary in primary grades. *Journal of Educational Psychology, 98*, 44–62. Leung, C. B. (2008). Preschoolers' acquisition of scientific vocabulary through repeated read-aloud events, retellings, and hands-on science activities. *Reading Psychology*, *29*, 165–193.
26 McGee, L. M., & Schickedanz, J. A. (2007). Repeated interactive read-alouds in preschool and kindergarten. *Reading Teacher*, *60*, 742–751.
27 Horst, J. S., Parsons, K. L., & Bryan, N. M. (2011). Get the story straight: Contextual repetition promotes word learning from storybooks. *Frontiers in Psychology*, *2*, 17.
28 McGee & Schikedanz (2007).
29 Ramsey, P. G. (2015). *Teaching and learning in a diverse world.* New York: Teachers College Press. (see Supplemental Resources)
30 Pentimonti, J. M., Justice, L. M., & Piasta, S. B. (2013). Sharing books with children. In T. Shanahan & C. J. Lonigan (Eds). *Early childhood literacy: The National Early Literacy Panel and beyond* (pp.117–134). Baltimore, MD: Paul H. Brookes Publishing. See also: U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse (2015, April).
31 Penno et al. (2002).
32 Penno et al. (2002).
33 Price, L. H., Bradley, B. A., & Smith, J. M. (2012). A comparison of preschool teachers' talk during storybook and information book read-alouds. *Early Childhood Research Quarterly*, *27*, 426–440. See also: Price, L. H., van Kleeck, A., & Huberty, C J. (2009). Talk during book sharing between parents and preschool children: A comparison between storybook and expository book conditions. *Reading Research Quarterly*, *44*, 171–194.

34 Diamond, K. E., Gerde, H. K., & Powell, D. R. (2008). Development in early literacy skills during the pre-kindergarten year in Head Start: Relations between growth in children's writing and understanding of letters. *Early Childhood Research Quarterly*, *23*, 467–478.
35 Cabell, S. Q., Tortorelli, L. S., & Gerde, H. K. (2013). How do I write…? Scaffolding preschoolers' early writing skills. *The Reading Teacher*, *66*, 650–659.
36 Gerde, H. K., Bingham, G. E., & Wasik, B. A. (2012). Writing in early childhood classrooms: Guidance for best practices. *Early Childhood Education Journal, 40,* 351–359.
37 Gerde, Bingham, & Wasik (2012).
38 Piasta, S. B., Justice, L. M., Cabell, S. Q., Wiggins, A. K., Pence Turnbull, K., & Curenton, S. M. (2012). Impact of professional development on preschool teachers' conversational responsivity and children's linguistic productivity and complexity. *Early Childhood Research Quarterly*, *27*, 387–400.
39 Beck, I. L., McKeown, M. G., & Kucan, L. (2002). Bringing words to life: Robust vocabulary instruction. New York: Guilford Press.
40 Wasik, B. A., & Hindman, A. H. (2011). The morning message in early childhood classrooms: Guidelines for best practices. *Early Childhood Education Journal*, *39*, 183–189. See also: Cabell et al. (2013)

Mathematics

3–5 Years

Children's early understanding of mathematics is a key contributor to school readiness skills and a powerful predictor of mathematics achievement in school.[1] Early math skills also are linked to later achievement in other domains, particularly reading.[2] Engaging young children with math concepts may strengthen their abstract thinking skills that in turn promote learning in other domains.[3]

Young children are naturally curious about their world, and math is a meaningful tool for helping them understand it. Young children also are highly capable of developing an early foundation of mathematics knowledge.[4] Early childhood programs are increasingly building on these interests and abilities by providing developmentally appropriate opportunities for children to understand and work with numbers and shapes.

Four broad sets of math skills are important to promote in the early years: number knowledge, geometric and spatial knowledge, pattern knowledge, and measurement knowledge. Number knowledge includes skills, such as counting, comparing, and basic addition.[5] Number knowledge provides a foundation for the development of more complex skills such as formal addition and subtraction.[6] Geometric and spatial knowledge[7] includes skills such as naming, describing, and manipulating basic shapes. This knowledge helps children understand, interact with, and communicate about the spatial environment around them.[8]

Pattern knowledge includes identifying, creating, and extending simple (ABAB) and other kinds of patterns (ABCABC). Pattern knowledge is related to children's spatial understanding and advanced math skills in later years, including multiplication and algebra.[9] Measurement knowledge includes understanding how nonstandard (example: our hand) and standard tools can be used to describe and compare the size of items.[10] Measurement knowledge provides a foundation for later geometry skills.[11]

Foundation Skills

- Number knowledge
- Geometric and spatial knowledge
- Pattern knowledge
- Measurement knowledge

Experts emphasize the importance of children developing a deep understanding of math concepts rather than simply memorizing facts.[12] Children often do not grasp the purpose of a math-related activity when they memorize information only. For example, children may be able to recite numbers up to 100 without knowing what the numbers mean. Children also may be able to tell the names of shapes without a genuine understanding of shape concepts (example: naming a square without the explicit understanding that a square has four equal sides and four right angles).[13]

Experts emphasize the importance of children developing a deep understanding of math concepts rather than simply memorizing facts.

Early childhood experts recommend offering young children instructional time dedicated specifically to math every day and integrating math into other classroom activities and areas.[14] Rigorous studies conducted in real-world early childhood classrooms document lasting outcomes of well-designed activities focused on math.[15] Early childhood programs that intentionally support children's math skills provide a strong foundation for later learning.[16] The growing research evidence on the development of children's math skills supports a number of recommended teaching strategies in early childhood programs.

Best practices introduce math concepts in a sequence, beginning with simpler concepts and moving to more advanced concepts when children are ready. Early math skills must be developed before more advanced skills can be learned.[17] Gradually introducing a limited number of math concepts in a developmental sequence provides children with a solid building block for eventually learning more complex concepts.

Best practices in promoting young children's math skills also include active learning opportunities, such as number songs and rhymes, scavenger hunts, craft activities, storybooks, and games. In addition, children benefit from being asked open-ended questions during a math activity. Research shows that children are more likely to learn math concepts when they talk about the math activity in which they are currently engaging.[18] For example, children are better able to find a correct answer on their own when they are encouraged to explain their reasoning or actions.[19]

Children's knowledge of math language is important for the development of their math skills.[20] Children benefit from hearing adults talk about math. The amount of "math talk" that children hear from their teachers and caregivers is related to children's math development over the preschool year.[21]

NAEYC Accreditation. A National Association for the Education of Young Children (NAEYC) position statement indicates that access to high-quality math education in preschool programs is critical to creating the foundation for children's later math learning.[22] The NAEYC program accreditation criteria specify a number of math concepts that children should have the opportunity to develop, including understanding of numbers, shapes, patterns, and measurement.[23]

Link to VLS. The Virtual Lab School's course on Cognitive Development describes examples of informal supports for math development (lesson 1), including math learning that can occur during art, dramatic play, and play with blocks and manipulatives (lesson 5). Math skills are included in a description of cognitive development milestones (lesson 2).[24]

Best practices introduce math concepts in a sequence, beginning with simpler concepts and moving to more advanced concepts when children are ready.

How ELM Promotes Mathematics Skills

The ELM curriculum promotes children's understanding of mathematics in the four skill areas described above. Activity plans focused on math are offered five days each week, with each week focusing on one or more of the four skill areas. The sequence of activity plans follows expert recommendations for first introducing basic concepts in each area and phasing in more advanced information over time by linking new information with existing knowledge.[25]

The activity plans use some technical math terms in communications aimed at staff who are implementing the curriculum (examples: cardinality, ABAB, one-to-one counting). The technical terms are defined in this *Guide*. The activity plans do not introduce these terms to children, even though children are actively learning the concepts represented by the terms. For example, activity plans consistently use the word *number* instead of numeral in suggested talk with children, even though numeral is the technical term for the Arabic symbol and number (or number word) is generally used in reference to a specific quantity. The word

numeral is used in the learning goal prepared for staff. Young children do not need to know technical terms in order to understand the concepts they represent.

Counting Things

Many activity plans focus on children's understanding of numbers and quantities. **Each of the planned experiences with counting involves a meaningful purpose** (example: counting the number of chairs at a table; see Week 1, Day 1). No ELM activity plan involves children reciting numbers for the purpose of memorizing a number sequence (1 through 10) or determining "how high" children can count, because such an activity separates the counting sequence from its purpose and meaning. Children's counting experiences in ELM begin with small sets of items, such as counting up to five books (Week 1, Day 2) and gradually move to larger quantities, such as counting up to 20 claps (Week 16, Day 3). As with all ELM activity plans, enrichment and extra support scaffolding tips are suggested.

Activity plans are designed to help children understand that numbers are all around us and that we use counting to find out "how many" (Week 1) and which is more (Week 3). Consistent with best practice recommendations,[26] the activity plans begin with a focus on helping children understand how to identify and create groups of two items (Week 2). Attention is given to counting items as well as **identifying "how many" without counting,** because this skill is important to children's development of understanding of quantities and numbers (number sense).[27] Practice in identifying "how many" without counting is limited to groups of five or fewer.

ELM introduces children to the concept of **one-to-one counting** first by matching groups of items. For example, in Week 7 children participate in a pretend task of helping a small group of children get ready for the first day of school. Children are encouraged to help determine how many children are in the group and how many of each school supply will be needed for each child to have one. Children also use one-to-one counting while pretending to prepare breakfast for three

Number Knowledge Promoted by ELM

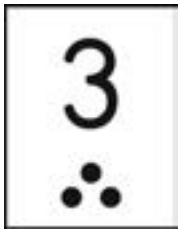
Skill	Definition	Examples
Counting small groups	Counting small sets of items to determine quantity	Groups of two (Week 2, Days 2–5)
Comparing	Identifying a set of objects or numeral that is larger or smaller	Compare groups of blocks to determine which group has more and which group has fewer (Week 16, Day 1)
Small number knowledge	Identify the number of items in a small group without counting	Identify the quantity in a group of counters (Week 3, Day 2)
One-to-one counting	Match one number to one item when counting	Count spots on animal cards and create an equal group of counters (Week 8, Day 3)
Last number counted (cardinality principle)	When counting, the last number tells us "how many"	"How many stars are on your card? How do you know?" (Week 11, Day 1)
Numeral recognition	Understand the quantity associated with written numerals	Identify the written number that tells the number of dots on a card (Week 13, Day 5)
Basic addition	Understand that the next number in the counting sequence is "one more" than the number before it	Adding "one more" counter above each number on a number list (Week 21, Day 2)

bears (Week 7, Day 2). The goal is to help children learn how to map (match) one number name per item when counting. The breakfast preparation activity is made meaningful for children by reading the popular children's story, *Goldilocks and the Three Bears*. Similar scenarios occur throughout the curriculum where specific storybooks are used to give meaning to children's participation in an activity.

ELM systematically introduces the important math concept of **last number counted** (Week 11). The final number counted in a group indicates the amount of items in that group. The technical term for this concept is the cardinality principle. An established teaching tool here is to state the total amount of items before they are counted and then restate the final total after counting.[28] Here is an example from Week 11, Day 2: "I have 10 circles on the floor. Let's count them together to make sure I have 10. [*Lead children in counting the circles in unison. Point to each circle as you count.*] We have 10 circles. We know this because when we counted them, the last number counted was 10."

There are many guided opportunities for children to learn the "language of math" so they are able to talk about math concepts. For example, children are introduced to the term "more" by being told a story about cookies and pretending that their counters are cookies. Children form groups of "cookies" and compare the quantity of cookies in their groups (Week 3). Children also use play food to compare quantities using terms such as "same," "more," and "equal" (Week 13, Day 3). These math language concepts are embedded throughout the curriculum and advance in complexity as the activity plans progress.

Written numerals are first introduced in Week 13. Similar to learning that each alphabet letter represents a sound, activity plans are designed to help children learn that **each numeral represents a certain amount**. There are several visual supports for learning this concept. Each numeral card includes a corresponding number of dots, and children count a group of items (counters, blocks) that match with the numeral on the card.



The activity plans provide children with opportunities to engage in discussions about number order. For example, children are shown a sequence of written numerals 1–10 (number list) and an invitation to determine which number comes after a given number (Week 18, Day 1). The concept of knowing **one more** is later introduced (Week 21). This strategy helps children to learn about number order and may also help them develop early addition and subtraction skills (example: 4 is 1 more than 3; 3 + 1 = 4). This concept is expanded in Weeks 22

Using Math Talk to Bolster Math Understanding

Children's knowledge of math vocabulary is critical to their understanding of math concepts. Children learn the language of math the same way they learn other types of words: by hearing the words used in their classroom (and at home) and by having supportive opportunities to use the words themselves. Some of the math words introduced in ELM include:

- More (Week 3, Day 3)
- Shape (Week 4, Day 1)
- Equal (Week 4, Day 1)
- Corner (Week 4, Day 2)
- Length (Week 24, Day 2)
- Diagonal (Week 9, Day 2)
- Size (Week 10, Day 2)
- Pattern (Week 14, Day 1)
- Pair (Week 16, Day 2)
- Less (Week 18, Day 2)
- Height (Week 24, Day 1)
- Measure (Week 24, Day 3)
- Whole (Week 27, Day 2)
- Fewest (Week 29, Day 1)
- Longest (Week 30, Day 3)

and 23 through the use of a game and number cards. There are opportunities for children to practice one-to-one counting with toy pennies and play food items in Week 23.

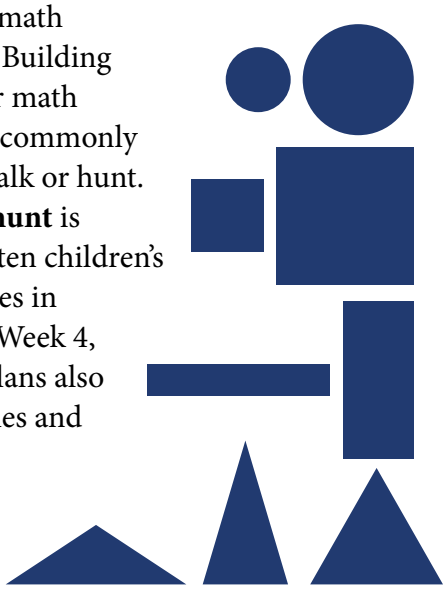
Finally, children are introduced to organizing and presenting information using **charts** (Weeks 29 and 30). For example, children vote for their favorite color and then help create a visual display of numerical information (Week 29, Day 3). Children also work together to create a chart of each child's height. In addition, colorful stickers are used to create a chart with a partner (Week 29, Day 4). Activity plans provide opportunities for children to discuss what a chart says (example: the most popular "favorite color" is blue) and what a chart does not say (example: just because the most children picked blue as their favorite color, it does not mean that the other children do not like blue).

Working with Shapes

The "Working with Shapes" heading reflects experts' view that hands-on opportunities to manipulate shapes actively promote children's geometric and spatial skills through understanding characteristics of shapes (particularly sides and corners) and how shapes can be combined, decomposed, and manipulated to create new shapes.[29]

Manipulating shapes strengthens children's spatial skills and understanding of shapes.

Children are encouraged to **feel the outlines of various shapes** when they are introduced to basic shapes and their names (Week 4, Day 1). They also are invited to describe shapes, find matching shapes, and sort shapes. Activity plans emphasize that shapes are all around us. Prominent pre-kindergarten math curricula, such as Building Blocks[30] and other math activity resources commonly include a shape walk or hunt. In ELM, a **shape hunt** is designed to heighten children's awareness of shapes in familiar settings (Week 4, Day 3). Activity plans also describe how circles and squares come in a variety of sizes (Week 4, Day 2), and that there are different



Variations of basic shapes

Geometric and Spatial Knowledge Promoted by ELM

Skill	Definition	Examples
Recognize and label shapes	Understand basic characteristics of common shapes	Circles, squares, and triangles (Week 4, Days 1 and 2) Match shape cutouts to items in the classroom (Week 4, Day 4)
Create basic shapes	Make shapes with correct characteristics (lines, angles)	Use yarn to make shapes (Week 9, Day 1)
Recognize how shapes are related to each other	Recognize that shapes can be put together or taken apart to form different shapes	Put together two triangles to make a square (Week 9, Day 2)
Recognize variations of basic shapes	Identify different sizes of circles and squares and non-perfect forms of triangles and rectangles	Sorting shapes of various sizes into baskets (Week 10, Day 2)

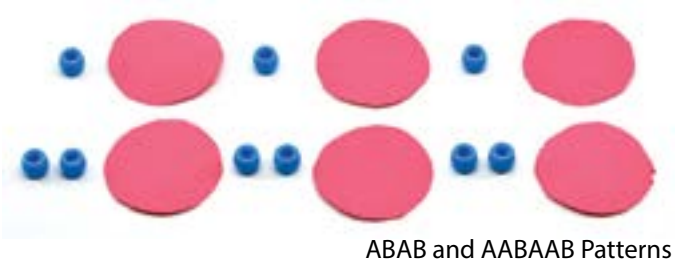
sizes of triangles and rectangles (Week 5, Day 2). For example, opportunities to work with tall thin rectangles and long thick rectangles seek to foster children's awareness that four sides that connect in right angles (not length, width, and height) are relevant characteristics of a rectangle.

ELM provides different opportunities to create shapes, such as children modeling shapes with their hands (Week 5, Day 3) and watching how new shapes are made out of other shapes (example: separating a square into two triangles; Week 9, Day 2). Children also can discover **how shapes fit together** by using triangle and circle cutouts to create a clown wearing a hat or an ice cream cone (Week 9, Day 3). There is preliminary exploration of using basic shapes to create new shapes in Week 4.

Making Patterns

The curriculum introduces patterns beginning in Week 14. The activity plans focused on patterns follow expertise regarding the developmental trajectory (or pathway) of children's understanding of patterns and shapes.[31] Learning about patterns may help in the development of children's abstract thinking[32] and it is a strong predictor of children's later mathematics skills.[33]

The first activity plan focused on patterns draws children's attention to patterns in clothing (stripes on a shirt) and forming a boy-girl-boy-girl pattern in a short line of children. There are opportunities for children to create simple patterns with two different colors of cubes and with alternating clap and tap actions.



ABAB and AABAAB Patterns

The pattern work begins with a **simple pattern** technically known as ABAB. Slightly more complex items are used for simple patterns in Weeks 19 and 20 that can include blocks, beads, and other toys with various characteristics (colors, shapes, sizes). Words and movements are also used to create patterns. For example, a pattern song uses "quack" and "waddle" (Week 19, Day 1). ELM introduces **another kind of pattern** in Week 19, Day 2 as children use manipulatives to copy a pattern known as AABAAB.

Measuring Things

Measurement is introduced in Week 24 as a way for children to learn and talk about the size of things. Understanding measurement helps children to compare and quantify the things around them.[34] Children are introduced to concepts such as **height, weight, and length** (Weeks 24, 25, and 26). The curriculum first introduces children to measurement by comparing the heights of two items. For example, one way children compare heights is by pairing up with another child and

Pattern Knowledge Promoted by ELM		
Skill	**Definition**	**Examples**
Understand basic patterns	Understand that patterns repeat themselves	Identify patterns on clothing (Week 14, Day 1)
Create basic patterns	Create a basic repeating pattern (ABAB)	Create patterns with two different-colored beads (Week 15, Day 2)
Create more complex patterns	Create a repeating pattern (AABAAB)	Create other kinds of patterns with cubes (Week 19, Day 4)

determining who is taller (Week 24, Day 1). Children are encouraged to measure items using cubes (Week 24), and are introduced to the use of rulers (Week 25) and scales (Week 26) as common tools of measurement. ELM offers opportunities for children to learn measurement words, such as tall/short, wide/narrow, and light/heavy.

Integration with Other Areas

Mathematics concepts are part of activity plans in several other areas. For example, children practice counting skills when they count the number of legs on insects (Science Week 14, Day 1) and count the number of letters in a word (Language/Literacy Week 6, Day 4). There also are opportunities to practice counting skills when using a stopwatch to determine the amount of time it takes to jump 10 times (Social Studies Week 32, Day 4).

Measurement Knowledge Promoted by ELM

Skill	Definition	Examples
Understand basic measurement	Understand that measuring is used to compare and describe items	Comparing items to hands (Week 24, Day 3)
Understand that number values are assigned when measuring items	Use one-to-one counting to assign numbers to measurements	Use hands to measure. "The table is __ hands long." (Week 24, Day 3)
Understand standard forms of measurement	Use standard tools of measurement and understand that standard measurements are always the same	Use rulers to measure (Week 25, Day 2)

Building on the Activity Plans

Experts have only recently identified the lasting benefits of promoting children's mathematics skills prior to formal schooling.[35] Providing focused time each day to mathematics is a relatively new part of pre-kindergarten classrooms. The increased attention to mathematics in programs of early care and education is part of the growing interest in science, technology, engineering, and mathematics (STEM).

More Practices for Promoting Mathematics Skills

The curriculum is consistent with experts' recommendation that math skills be promoted during a designated time each day. However, experts also recommend explicit support for math skills **throughout the day** that is embedded in other activities (e.g., transitions, storybooks).[36] Below are some ways that classroom staff members can build on children's math interests as a part of regular classroom activities and interactions.

- Be specific about quantities when talking about groups of items. Example: Say "We need to pick these *three* books up off the floor," rather than "Let's pick these books up off the floor." Using specific numbers may reinforce children's number understanding.
- Ask questions that invite children to respond with comparative language, such as fewer, more, less, many. "Are there more boys or girls in the room today?" "Whose glass has less milk in it?"
- Make spontaneous comparisons throughout the day. Examples: "You have more grapes than I do!" "Whose block tower is taller? How do we know?"

- During transitions in and out of the classroom, have children line up by height (e.g., shortest to tallest) or in a pattern (e.g., boy-girl-boy-girl).
- The outdoors provides many opportunities for children to engage in real world math.[37] Children can count items and compare groups of items in a fun setting. Children can also classify items that they find outside by categories (examples: color, shape, size). Connecting math ideas to nature may help children understand purposes of math as well as the fun of it.
- Provide math-related games during center times. Games that involve dice encourage one-to-one counting. Linear board games may improve children's developing concept of the number sequence[38] (similar to the number list used in the activities). Dominoes can be a great way to work on one-to-one counting and comparing/matching groups. Decks of playing cards also may help children to connect written numerals with sets of items as well as identifying which numbers mean more.

Strengthening Your Understanding of Math

The following suggestions are aimed at helping classroom staff bolster their familiarity with best practices in promoting preschool-age children's mathematics skills.

- What are your ideas about why young children's math skills are linked to early reading ability and achievement in other domains?
- Some parents and other adults assume that a young child's ability to count to a high number, such as 50 or 100, is clear evidence of a child's understanding of math. But, as indicated in this guide, children often do not grasp the purpose of a math-related activity when they memorize information only. Children may be able to recite numbers up to 50 or 100 without knowing what the numbers mean. What are your ideas about how to help adults understand the importance of children developing a deep understanding of math concepts rather than simply memorizing facts?
- Introducing children to an advanced math concept before they have mastered an earlier math skill is likely to cause confusion or worse. Make your own list of the sequence in which math concepts are introduced to children by going through the activity plans in their order of presentation, beginning with Week 1, day 1.
- Look for opportunities to promote math skills as part of activity plans in other domains of the curriculum (see Also Promotes in the left column of the first page of the activity plan). How does the activity plan in another domain promote children's math skills?

Endnotes

1 Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., … & Japel, C. (2007). School readiness and later achievement. *Developmental Psychology, 43*, 1428–1446.
2 Duncan et al. (2007).
3 Claessens, A., & Engel, M. (2013). How important is where you start? Early mathematics knowledge and later school success. *Teachers College Record, 115*, 1–29.
4 National Mathematics Advisory Panel. (2008). *Foundations for success: The final report of the National Mathematics Advisory Panel.* Washington, DC: U.S. Department of Education. Washington, DC.
5 Purpura, D.J., & Lonigan, C. J. (2013). Informal numeracy skills: The structure and relations among numbering, relations, and arithmetic operations in preschool. *American Educational Research Journal, 50*, 178–209.
6 Ostergren, R., & Traff, U. (2013). Early number knowledge and cognitive ability affect early arithmetic ability. *Journal of Experimental Child Psychology, 115*, 405–421.

7 Spatial skills are the ability to perceive and manipulate objects and shapes flexibly. See: Mix, K. S., & Cheng, Y.-L. (2012). The relation between space and math: Developmental and educational implications. *Advances in Child Development and Behavior, 42*, 197–243.
8 Sarama, J., & Clements, D. H. (2008). Mathematics in early childhood. In O. Saracho & B. Spodek (Eds.), *Contemporary perspectives on mathematics in early childhood education* (pp. 67–94). Charlotte, NC: Information Age Publishing, Inc.
9 Mulligan, J., & Mitchelmore, M. (2009). Awareness of pattern and structure in early mathematical development. *Mathematics Education Research Journal, 21*, 33–49. See also: Papic, M. M., Mulligan, J. T., & Mitchelmore, M. C. (2011). Assessing the development of preschoolers' mathematical patterning. *Journal for Research in Mathematics Education, 42*, 237–268.
10 Clements, D. H., & Sarama, J. (2007). Effects of a preschool mathematics curriculum: Summative research on the Building Blocks project. *Journal for Research in Mathematics Education, 38*, 136–163.
11 Frye, D., Baroody, A. J., Burchinal, M., Carver, S. M., Jordan, N. C., & McDowell, J. (2013). *Teaching math to young children: A practice guide* (NCEE 2014–4005). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. Retrieved from the NCEE website: http://whatworks.ed.gov
12 Frye et al. (2013).
13 Clements, D. H., Swaminathan, S., Hannibal, M. A. Z., & Sarama, J. (1999). Young children's concepts of shape. *Journal for Research in Mathematics Education, 30*, 192–212.
14 Frye et al. (2013).
15 Clements & Sarama (2007). See also: Frye et al. (2013).
16 Arnold, D. H., Fisher, P. H., Doctoroff, G. L., & Dobbs, J. (2002). Accelerating math development in Head Start classrooms. *Journal of Educational Psychology, 94*, 762–770. See also: Jenkins, J. M., & Duncan, G. J. (2017). Do pre-kindergarten curricula matter? *The Current State of Scientific Knowledge on Pre-Kindergarten Effects*. (pp. 37–44). Brookings Institute. Retrieved from: https://www.brookings.edu/wp-content/uploads/2017/04/duke_prekstudy_final_4-4-17_hires.pdf
17 Daro, P., Mosher, F. A., & Corcoran, T. B. (2011). Learning trajectories in mathematics: A foundation for standards, curriculum, assessment, and instruction. *Consortium for Policy Research in Education Research Reports*.
18 Hofer, K. G., Farran, D. C., & Cummings, T. P. (2013). Preschool children's math-related behaviors mediate curriculum effects on math achievement gains. *Early Childhood Research Quarterly, 28*, 487–495.
19 Sarama & Clements (2008).
20 Purpura, D. J., Napoli, A. R., Wehrspann, E. A., & Gold, Z. S. (2017). Causal connections between mathematical language and mathematical knowledge: A dialogic reading intervention. *Journal of Research on Educational Effectiveness, 10*, 116–137.
21 Klibanoff, R. S., Levine, S. C., Huttenlocher, J., Vasilyeva, M., & Hedges, L. V. (2006). Preschool children's mathematical knowledge: The effect of teacher "math talk." *Developmental Psychology, 42*, 59–69.
22 National Association for the Education of Young Children. (2002). *Early childhood mathematics: Promoting good beginnings*.
23 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items*. Washington, DC: Author.
24 www.virtuallabschool.org/preschool/cognitive
25 Frye et al. (2013).
26 Frye et al. (2013).
27 Sarama & Clements (2008).
28 Mix, K. S., Sandhofer, C. M., Moore, J. A., & Russell, C. (2012). Acquisition of the cardinal word principle: The role of input. *Early Childhood Research Quarterly, 27*, 274–283.
29 Clements, D. (1999). Geometric and spatial thinking in young children In J. V. Copley (Ed.), *Mathematics in the early years* (pp. 66–79). Reston, VA: The National Council of Teachers of Mathematics, Inc.
30 Clements, D.H., & Sarama, J. (2013). *Building blocks*. Columbus, OH: McGraw-Hill.
31 Frye et al. (2013).
32 Ginsburg, H. P. & Ertle, B. (2008). Knowing mathematics in early childhood mathematics. In O. Saracho & B. Spodek (Eds.), Contemporary perspectives on mathematics in early childhood education (pp. 45–66). Charlotte, NC: Information Age Publishing, Inc.
33 Rittle-Johnson, B., Fyfe, E. R., Hofer, K. G., & Farran, D. C. (2017). Early math trajectories: Low-income children's mathematics knowledge from ages 4 to 11. *Child Development, 88*, 1727–1742.
34 Frye et al. (2013).
35 Watts, T. W., Duncan, G. J., Clements, D. H., & Sarama, J. (2018). What is the long-run impact of learning mathematics during preschool. *Child Development, 89*, 539–555.

36 Frye et al. (2013).
37 Basile. (1999) The outdoors as a context for mathematics in the early years. In J. V. Copley (Ed.), *Mathematics in the early years* (pp. 156–161). Reston, VA: The National Council of Teachers of Mathematics, Inc.
38 Siegler, R. S., & Ramani, G. B. (2009). Playing linear number board games—but not circular ones—improves low-income preschoolers' numerical understanding. *Journal of Educational Psychology, 101*, 545–560.

Self-Regulation

3–5 Years

Self-regulation is the ability to manage our behaviors, emotions, and thoughts. These skills develop early in life and are strong predictors of school readiness and later life success.[1] Children who are able to pay attention, follow instructions, stay focused on a task, and control impulses, for example, demonstrate stronger academic skills than children who have not developed these regulatory skills. Their academic gains include early mathematics and literacy.[2]

Children are better able to make the most of classrooms and other learning settings when they can control their behaviors, emotions, and thoughts, and concentrate on their experiences, self, and others. Attention span persistence, a key aspect of self-regulation, in the preschool years predicts achievement at 21 and 25 years.[3] Self-regulation in childhood also has a modest association with financial well-being and other indicators of adult functioning.[4]

One important component of self-regulation for school readiness and academic achievement is *executive function*. Executive function is a set of mental processes that include:

- paying attention and flexibly shifting focus,
- holding onto and using information, and
- inhibiting natural thoughts and responses that are inappropriate to the situation.

These mental processes help children exercise self-control of their behaviors in many ways. Examples include listening to and following requests, remembering multi-step tasks, pausing and thinking before reacting. All of these learning-related skills contribute to children's success in school.[5]

Harvard University's Center on the Developing Child describes executive function as similar to "an airport having a highly effective air traffic control system to manage the arrival and departures" of numerous planes on multiple runways.[6] Executive function develops rapidly in the preschool-age years and is a building block of higher-order skills, such as reasoning, problem-solving, and planning.[7]

Foundation Skills

- Self-control of behaviors, emotions, and thoughts
- Ability to concentrate on experiences, self, and others
- Executive function

Self-regulation can be bolstered during the early childhood years through fun games and activities.

Self-regulation, including executive function, can be bolstered during the early childhood years through fun games that involve attending to pertinent information by listening, watching, and following requests. Studies of planned experiences for improving self-regulation point to positive impacts on the intended outcome of self-regulation[8] and, as an important bonus, on early mathematics and literacy skills even though these content areas were not the target of intentional games and activities. Further, dual language learners from lower-income families made a one-year gain in mathematics ability within a six-month period.[9]

NAEYC Accreditation. The importance of promoting children's self-regulation skills is recognized in the national program accreditation system of the National Association for the Education of Young Children (NAEYC). Standard 1 (Relationships) calls for staff to actively help children develop social, communication, and emotional regulation skills. The NAEYC standard expects teaching staff to help children persist when they are frustrated and to control their physical impulses.[10]

Link to VLS. The Virtual Lab School's course on preschool social-emotional development describes children's abilities to regulate their emotions, thoughts, and behaviors as part of self-management skills (lesson 1).[11] The course notes that preschool-age children need help and practice with appropriate regulation of their emotions (lesson 2). The VLS course on social-emotional development also describes some reasons children may exhibit challenging behaviors, such as not understanding how to do an activity (lesson 3).

How ELM Promotes Self-Regulation

ELM offers a sequenced mix of self-control explanations and practices, deep breathing and yoga exercises, and circle time games to foster children's abilities to manage their behaviors and thoughts. Each of these areas is described below. Support for children's regulation of their emotions is included in ELM's activities in the Social-Emotional area.

Using Self-Control

The use of self-control applies to a wide range of situations in daily life. ELM begins its attention to self-control with a focus on the classroom in Weeks 1–3.

The activity plans provide an opportunity for staff to review existing classroom and circle time **rules** (Week 2). The activity plan explains that rules "tell us how to behave" and describes reasons for rules. Children are more likely to follow rules when they understand the reasons for rules. ELM provides picture-based charts of common classroom and circle time rules for discussion with children and for posting in the classroom as visual reminders. These are offered as examples for classroom staff. Classrooms may have additional or different sets of rules.

Children are more likely to follow rules when they understand the reasons for rules.

The ways in which **routines** help us learn are described in Week 2. The sequence of steps in playing on a slide is used as an example of a routine. A review of the classroom's posted daily schedule can be a useful way to help children understand the concept of routines. Children's transitions from one activity or setting to another can move smoothly when children are able to reliably anticipate "what happens next."

The benefits of **listening carefully and waiting patiently for our turn** to talk or act are introduced in Week 3. The activity plan describes why listening is important. A group activity in which all children talk at the same time illustrates the value of waiting for our turn to speak. This helps set the stage for a Week 4 activity on what it means to concentrate.

Beginning in Week 5, activities are designed to help children understand that self-control helps us "do the right thing" by pausing to **think before we act** and **resisting temptations and distractions**. Two short stories about a child who struggles to control her impulses are used to focus children's attention on consequences of impulsive actions, such as knocking down another child's block tower. There is a guided discussion with children of how the child in the stories needs to think about her actions as part of making good choices. A theme is thinking about what we should do rather than what we want to do.

Children are introduced to specific ways to **wait patiently for a desired object**, such as time at a computer station (Weeks 6 and 7). High-quality classrooms minimize the amount of time children must wait for something, yet a period of waiting is often a necessary part of the daily schedule. ELM uses scenarios of waiting for a turn at a computer

and waiting for a snack to describe waiting strategies featured in a description of how Cookie Monster waited to eat a cookie. One of Cookie Monster's strategies is to sing quietly to himself while waiting. Research suggests this can be a useful way for children to wait for something.[12]

Paying Attention

A set of activity plans offered early in the ELM curriculum introduces the concept of concentration as paying close attention to something. The Week 4 session demonstrates the process of concentrating on the task of assembling a puzzle and on the in-and-out flow of air as we breathe. Later sessions are designed to strengthen children's ability to concentrate on their breathing and body through activities that reflect mindfulness practices, including yoga. Mindfulness involves a state of awareness and attention to one's thoughts and emotions plus being fully present in each and every moment. Research suggests that young children can grasp and enjoy the core aspects of mindfulness exercises through developmentally appropriate activities, such as deep breathing and yoga.[13]

Deep breathing activities promote mindfulness because they help children to slow down, focus their attention, and become aware of thoughts and emotions occurring in the moment. These processes in turn enhance sustained attention and emotion regulation. Deep breathing exercises are introduced in Week 10.[14] The first session emphasizes what it feels like to have a calm mind (noisy thoughts get quiet) and a relaxed body. Experts in mindfulness note the importance of helping children understand and experience calmness.[15] Deep breathing activities are interspersed across activity plans (Weeks 14, 23, 26, 29, 32, 35). Initially children are invited to put their hand on their stomach and to notice how their hand moves as they breathe in and out. In several later breathing activities, a stuffed toy animal or some other type of prop is placed on a child's abdomen to promote attention to the rhythm of breathing. Children are encouraged to quietly rock the toy animal to sleep by breathing in and out (Weeks 17 and 32).

In addition to deep breathing, concentration activities draw attention to **contrasts between intentionally tightening and then relaxing specific parts of children's bodies**. Children are encouraged to concentrate on their hands and arms by imagining they are squeezing juice from two small oranges, one in each hand. Attention is drawn to the relaxed state of hands and arms after squeezing all juice from the pretend oranges. Concentration on a child's face is promoted by encouraging children to gently scrunch their nose and face in order to move along an imaginary butterfly that has landed on the child's nose. Children are cautioned to not touch the delicate butterfly, and to notice how their face relaxes after the imaginary butterfly flies away (see Week 10 for an example).

The deep breathing and muscle tightening/relaxation contrast practices are common in mindfulness activities with young children.[16]

Yoga poses are introduced in Week 11 as a way for children to concentrate on their breathing while stretching their bodies. Yoga promotes mindfulness because it allows children to focus their attention on the sensations occurring within their bodies at a given moment in a given pose. Among established approaches to promoting mindfulness, yoga is a good concentration activity for young children because it involves physical movement (versus sitting) and can be engaged in for brief periods of time. ELM's activity plans for yoga suggest that children take two or three deep breaths while holding a pose. Benefits of this mindfulness activity can be strengthened when children are encouraged to focus attention on their bodies as well as their breathing.

Yoga is a good concentration activity for young children because it involves physical movement for brief periods of time.

Yoga poses are featured during 1–2 days of eight different weeks spread across the 50-week curriculum. The primary resource is an illustrated book of yoga poses for young children, organized by letters of the alphabet.[17] **Staff are encouraged to select poses they feel comfortable demonstrating and that are suited to the abilities and interests of children in their setting**.

It is challenging for children (and adults) to fully concentrate on their breathing and body posture as part of yoga activities. Other thoughts can easily occupy our minds. The curriculum's yoga lessons readily acknowledge this pattern and, at the same time, suggest that children try to "put our thoughts on a big cloud in the sky…[and] imagine we are watching our thoughts float away on a big cloud so our mind is quiet" (Week 14).

Research evidence suggests that a mindfulness practice, such as yoga paired with an emphasis on gratitude, sharing, and related acts of kindness[18] (see the section on Social-Emotional development in this *User Guide*) are linked to academic, social-emotional, and learning gains.[19]

Children's ability to concentrate is also promoted in several games focused on awareness of another child's facial characteristics, such as eye color (Week 20), and on using the sense of touch to describe characteristics of an object the child cannot see (Week 26).

Focusing and Remembering

ELM offers 12 different **circle time games** that are fun yet challenging for children to play. They are similar to some popular children's activities, such as *Red Light, Green Light*. The games begin in Week 8 and build on ELM's attention to using self-control and paying attention (see above) by adding more elements of self-regulation, particularly executive function.

Although all of the games focus broadly on improving children's executive function, some of the games target specific skills initially and then introduce other skills by adding or changing game rules. For example, when the *Freeze Game* is first introduced (Week 9, Day 1), children primarily practice their impulse control (freezing when the music stops rather than continuing to dance). As new rules are introduced in subsequent weeks, children also practice remembering requests (such as dance slowly to slow music and fast to fast music) and flexibly shifting to changing rules (such as doing the opposite of the previous rule). This gradual change in complexity of the games keeps children engaged as their executive function skills are developing and allows children to integrate these skills.

In each game, children are expected to focus on and remember a set of requests, attend carefully to verbal or aural cues that signal when to carry out a particular action, successfully switch an action when a rule changes, and resist temptations to behave inappropriately. The games are based on activities[20] that researchers have found to be effective in promoting preschool children's behavioral self-regulation skills.[21]

Frequent practice is a proven way to master new skills, yet doing something again and again without added challenge is unlikely to promote growth in self-regulation.

The 12 games are offered in three sets of four games each. Approximately 3–5 weeks after a game is introduced, it is repeated with incremental increases in challenge. The increased challenge is offered through new rules and switches in rules within a game. Introducing the new rules is critical for the development of self-regulation. Children are appropriately challenged to use and practice different executive function skills as rules change and the games become more complex. The four games in each set are offered two times before a new

set of four games is introduced. Frequent practice is a proven way to master new skills, yet doing something again and again without added challenge is unlikely to promote growth in self-regulation.[22]

Some children may show some initial resistance to a new rule when it is first introduced because it increases the difficulty of the game. But most children will begin to understand the new rule quickly through teacher and peer modeling and repeated instruction. Consistent with all ELM activity plans, the circle time game plans include scaffolding tips that staff may use to tailor a game through extra support or enrichment.

The Freeze Game described above is an example of adding challenge to a game. Another example of adding increased challenge is the *Drum Beats* game, first played in Week 16, Day 2. The initial set of rules include children tapping their knees lightly and stopping in response to different drum beat cues. Game rules are then changed after children become familiar with the initial game rules. *Drum Beats* is played a second time (Week 19, Day 2) and additional rule changes add more challenge. There also is a provision during the second offering of *Drum Beats* for children to try the new rules in an opposite manner.

Integration with Other Areas

ELM promotes self-regulation skills in many activity plans designed to primarily promote other areas of development. For example, a *Simon Says* game is used to strengthen children's understanding of prepositions and relational words (Language/Literacy Week 3, Day 4). Also, a *Musical Chairs* game promotes cooperation (sharing a chair with someone) while also offering opportunities for children to strengthen self-regulation skills, such as their actions associated with the start and stop of the music (Social-Emotional Week 4, Day 2). Support for children's regulation of their emotions is provided mostly in ELM's activity plans for Social-Emotional development, as noted earlier.

Building on the Activity Plans

ELM's activity plans offer a solid foundation for helping children manage their behaviors, emotions, and thoughts. Additional steps should be taken to help children practice good self-regulation in the classroom and to maximize the benefits of intentional activities. These steps pertain to a classroom's routines and organization, and to the classroom staff's understanding of practices that promote children's self-regulation.

More Practices for Promoting Self-Regulation

An organized classroom with predictability in activities and clear expectations for behavior can help children to learn and demonstrate self-regulation. For example, research indicates that children make greater gains in self-regulation and academic skills when their teachers help them anticipate what will happen during the day.[23] Following is a list of classroom practices that set the stage for children's positive use of self-regulation skills:[24]

- Embed brief self-regulation reminders in routine interactions with children.
- Draw children's attention to spontaneous examples of positive self-regulation.
- Provide immediate supportive feedback to children who exhibit good self-regulation.
- Act promptly to prevent a child's breakdown in self-regulation (such as grabbing an item from another child) from escalating into a larger challenge by helping the child recognize his/her feelings and think about a good choice.
- Prepare children for a transition with a clear advance notice, such as a five-minute signal for center clean-up time.
- In organizing the daily schedule, recognize that children may be ready for a movement-based self-regulation activity at the beginning of the day and may be better prepared for some "sitting" time after engaging in some movement.
- Use a simple tool, such as carpet squares, to help children know their intended space during group time.
- Develop and use a consistent set of routines for circle time, including rituals for a greeting and a closing.
- Build secure and trusting relationships with all children in the classroom,
- Remember that the process of developing self-regulation skills requires lots of time and practice that is likely to include mistakes.

Strengthening Your Understanding of Self-Regulation

Below are some suggestions for reflecting on and increasing your understanding of children's self-regulation skills.

- This guide reports that studies of games and other planned experiences for improving children's self-regulation skills found positive effects on self-regulation plus early mathematics and early literacy skills even though mathematics and literacy were not emphasized in the games and other experiences. What are your ideas about why self-regulation games and other planned activities would also promote children's skills in mathematics and early literacy?
- During what times of your classroom's daily schedule is it particularly important for children to stay focused, filter distractions, or switch gears? In addition to using ELM's self-regulation activities, are there other practices (see above) that you might use differently or more frequently to help children learn good self-regulation during these times?
- Select an activity plan in any of ELM's seven other preschool-age areas of development that also promotes self-regulation. (Look for the Also Promotes in the left column of the first page of an activity plan.) In what ways does the activity plan intend to help children strengthen their self-regulation skills? What do you think might be the payoff for children of integrating self-regulation into some activity plans in another area of development?
- Children are offered strategies for using self-control while waiting for their turn (Weeks 5, 6, 7). They also are introduced to a simple definition of concentration in Week 4. How might you promote children's use of self-control and concentration as an explicit part of other activities in your classroom?
- Children are given guidance on deep breathing exercises aimed at calming their minds and bodies (Weeks 14, 23, 26, 29, 32, 35). Are there recent experiences in your classroom where a brief deep breathing exercise might have helped some children to calm down?

Endnotes

1 Blair, C., & Raver, C. C. (2015). School readiness and self-regulation: A developmental psychobiological approach. *Annual Review of Psychology*, 66, 711–731.
2 McClelland, M. M., Cameron, C. E., Connor, C. M., Farris, C. L., Jewkes, A. M., & Morrison, F. J. (2007). Links between behavioral regulation and preschoolers' literacy, vocabulary, and math skills. *Developmental Psychology, 43*, 947–959.
3 McClelland, M. M., Acock, A. C., Piccinin, A., Rhea, S. A., & Stallings, M. C. (2013). Relations between preschool attention span-persistence and age 25 educational outcomes. *Early Childhood Research Quarterly*, *28*, 314–324.
4 Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., & Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences, 108*, 2693–2698.
5 McClelland, M. M., & Tominey, S. L. (2016). *Stop, think, act: Integrating self-regulation in the early childhood classroom*. New York: Routledge.
6 Center on the Developing Child at Harvard University. (2011). *Building the Brain's "Air Traffic Control" System: How Early Experiences Shape the Development of Executive Function: Working Paper No. 11*. Retrieved from www.developingchild.harvard.edu.
7 Diamond, A., & Ling, D. S. (2016). Conclusions about interventions, programs, and approaches for improving executive functions that appear justified and those that, despite much hype, do not. *Developmental Cognitive Neuroscience, 18*, 34–48. doi:10.1016/j.dcn.2015.11.005
8 Tominey, S. L. & McClelland, M. M. (2011). Red light, purple light: Findings from a randomized trial using circle time games to improve behavioral self-regulation in preschool. *Early Education and Development, 22*, 489–519.
9 Schmitt, S. A., McClelland, M. M., Tominey, S. L., & Acock, A. C. (2015). Strengthening school readiness for Head Start children: Evaluation of a self-regulation intervention. *Early Childhood Research Quarterly, 30*, 20–31.
10 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items.* Washington, DC: Author.
11 www.virtuallabschool.org/preschool/social-emotional
12 Winsler, A., Ducenne, L., & Kourey, A. (2011). Singing one's way to self-regulation: The role of early music and movement curricula and private speech. *Early Education and Development, 22*, 274–304.
13 Zelazo, P. D., & Lyons, K. E. (2012). The potential benefits of mindfulness training in early childhood: A developmental social cognitive neuroscience perspective. *Child Development Perspectives, 6*, 154–160.
14 The curriculum's deep breathing activities are informed by the work of the Families OverComing Under Stress (FOCUS) program at the Nathanson Family Resiliency Center, University of California, Los Angeles.
15 Zelazo & Lyons (2012).
16 Zelazo & Lyons (2012).
17 Power, T. A. (2009). *The ABCs of yoga for kids*. Pacific Palisades, CA: Stafford House.
18 Razza, R. A., Bergen-Cico, D., & Raymond, K. (2015). Enhancing preschoolers' self-regulation via mindful yoga. *Journal of Child and Family Studies*, *24*, 372–385.
19 Flook, L., Goldberg, S. B., Pinger, L., & Davidson, R. J. (2015). Promoting prosocial behavior and self-regulatory skills in preschool children through a mindfulness-based kindness curriculum. *Developmental Psychology, 51*, 44–51.
20 McClelland & Tominey (2016).
21 Schmitt et al. (2015). See also: Tominey & McClelland (2011).
22 Diamond, A., & Ling, D. (in press). Fundamental questions surrounding efforts to improve executive functions (including working memory). In M. Bunting, J. Novick, M. Dougherty, & R. W. Engle (Eds.), *An integrative approach to cognitive and working memory training: Perspectives from psychology, neuroscience, and human development*. New York: Oxford University Press.
23 Cameron, C. E., & Morrison, F. J. (2011). Teacher activity orienting predicts preschoolers' academic and self-regulation skills. *Early Education and Development, 22*, 620–648.
24 McClelland & Tominey (2016).

Social-Emotional

3–5 Years

Social-emotional competencies are a significant contributor to success in school and life.[1] Studies show that children with strong social-emotional skills in the preschool years demonstrate on average stronger abilities in reading and mathematics in first grade than preschool-age children with weaker social-emotional skills.[2] Children with strong social-emotional skills in the preschool years also tend to have positive transitions to kindergarten.[3]

The "social" part of social-emotional competence includes skills in getting along well with others. Especially important are abilities to engage in positive interactions with peers and adults, and to solve typical social problems, such as wanting to play with a toy another child is using. Positive peer relationships and prosocial behaviors during the preschool years predict later adjustment and academic achievement.[4]

Preschoolers' positive peer relationships and prosocial behaviors predict later adjustment and achievement.

The "emotion" part of social-emotional competence includes children's abilities to identify, control, and express their own emotions[5] as well as identify the emotions and views of another person (perspective-taking). Children's skills in understanding and managing emotions are linked to their academic success,[6] including appropriate classroom behaviors and academic performance in kindergarten.[7]

Personal responsibility involves skills in making constructive choices about personal behavior and social interactions in different settings.[8] A key skill in this area is thinking about likely consequences of a possible action and how behaviors may affect others.[9] Personal responsibility also includes the ability to adhere to classroom guidelines and take ownership of actions.

Foundation Skills

- Relationship skills, including social problem-solving skills
- Emotion knowledge
- Perspective-taking
- Personal responsibility

Research shows that social and emotional learning can be successfully promoted in early childhood programs, with lasting contributions to social-emotional functioning.[10] Effective approaches use active forms of learning that provide sequenced and explicit attention to the development of particular skills.[11] Practices include brief and well-focused instructional sessions in large or small group settings;[12] modeling and role play, sometimes with the use of puppets;[13] visuals such as pictures of different emotional expressions to help children label an emotion;[14] games, songs, stories, and guided discussion to emphasize key points of an activity.

NAEYC Accreditation. The National Association for the Education of Young Children (NAEYC) program standards and accreditation criteria[15] call for early childhood programs to help children to learn how to:

- recognize and name their own and others' feelings
- regulate their emotions
- understand, empathize with, and take into account other people's perspectives
- interact positively, respectfully, and cooperatively with others
- resolve conflicts in constructive ways, and
- appropriately enter into social groups, develop friendships, and be helpful to others.

The important role of attentive and responsive caregivers in developing social-emotional

competencies is also emphasized in the NAEYC accreditation standards.

Link to VLS. The content of Virtual Lab School's course on Preschool Social-Emotional Development aligns with the curriculum's foundation skills related to social-emotional development.[16] The VLS content includes self-awareness (emotion knowledge), self-management (emotion regulation), social awareness (perspective-taking), relationship skills, and responsible decision-making (lesson 1). The course also offers information on social-emotional milestones (lesson 2) and ways to promote social-emotional development (lessons 3 and 4).

How ELM Promotes Social-Emotional Development

The curriculum's targeted support for social-emotional development is organized into three broad areas: Getting Along with Others; Understanding Feelings; Being Responsible.

There are one or two activity plans each week for promoting social-emotional development. The plans are scheduled for Days 2 and/or 3. Activity plans in other domains also offer content related to a social-emotional topic.

Getting Along With Others

The relationship skills addressed in the curriculum focus on a range of important aspects of getting along with peers: initiating play (Weeks 1–2), sharing and taking turns (Week 3), cooperating (Week 4), social problem-solving (Weeks 5–6), helping others (Week 7), being friendly (Week 8), and offering compliments (Week 9).

The curriculum's **intentional teaching of relationship skills includes demonstrations and visuals.** For example, a session on sharing includes illustrations of sharing play dough by splitting it in half and playing together with a puzzle (Week 3, Day 3). A poster featuring a child shows four steps in solving a social problem (Week 5, Day 3). In another session on considering different responses to typical problem situations, children can work with picture cards that depict possible solutions (Week 6).

The activity plans offer numerous guided opportunities for children to practice emerging social-emotional skills. As a follow-up to a description and demonstration of four different ways of asking someone to play, for example, children are offered support for trying out the options with a puppet (Week 2, Day 3). Other examples of active learning of relationship skills include children's experiences in playing musical chairs in a cooperative way (Week 4, Day 2), and sharing tools and tasks in making a class quilt (Week 4, Day 3).

Children's understanding of relationship skills is also promoted through **focused discussion of books read aloud**. For example, children are encouraged to identify and describe how Sarah, in *The Mitten Tree* by Candace Christiansen, helped the children with no mittens (Week 7, Day 3). As a follow-up to sharing the book *Try a Little Kindness* by Henry Cole, children are invited to talk about some of the kind behavior highlighted in the book, such as a peacock in the story saying that how we feel on the inside is more important than how we look on the outside (Week 8, Day 2).

Understanding Feelings

The curriculum's activity plans introduce **a wide range of emotions**, one at a time beginning in Week 10. Without knowledge of a variety of emotion words, children are unable to accurately perceive and identify feelings in themselves or others.[17] Preschool-age children's ability to recognize different emotions contributes to the quality of interactions with peers and teachers[18] and is associated with academic skills in first grade.[19] ELM's introduction of many different emotions builds on an established pattern of substantial increases in children's emotion-related vocabulary in the preschool years.[20] ELM initially introduces relatively straightforward emotions (happy, silly, sad) as a basis for children's later understanding of more complex emotions.[21]

Learning a label for an emotion can help children talk about how they feel and how others might feel.

Children are not expected to remember each of the emotions introduced in activity plans. The goal is to expose children to a variety of emotions, laying the foundation for later skill development. But it is likely that particular emotions will be of interest and relevant to different children. Learning a label for an emotion can help children talk about how they feel and how others might feel. In addition, children benefit from knowing there are many different feelings and that it is "okay" to experience different feelings, sometimes during one day or week or situation. It also is helpful for children to know it is "okay" for people to have different feelings about the same thing. This understanding directly connects to the curriculum's attention to respecting differences in others (Weeks 1–9 in Social Studies).

An emotion is defined simply as "how we feel on the inside" (Week 10, Day 2). Children are introduced to the idea that various feelings can be sorted into "feeling good inside" (happy, excited, proud) and "not feeling good inside" (scared, sad, frustrated).

A similar format is used to introduce each emotion. The book *The Way I Feel* by Janan Cain is used to define an emotion and provide a picture of a facial expression and body language associated with an emotion. A curriculum-provided poster of different emotion-related facial expressions also is used. Children are encouraged to use their own face and body to show what a targeted emotion might look like. Children also are invited to discuss what might prompt someone to experience the target emotion and whether they have ever felt the emotion. Other tools are used to heighten awareness of emotions, such as creating and using feeling faces (Week 11, Day 2), and discussing the book *Taking a Bath with the Dog and Other Things that Make Me Happy* by Scott Menchin (Week 10, Day 3).

For many of the emotions explored in the curriculum, at least one practical way is offered for how children can positively manage the emotion. For example, the curriculum describes and provides practice opportunities with the turtle technique,[22] an established strategy for reducing

feelings of anger (Week 12, Day 2). Options for dealing with sad or lonely feelings are described with the help of a picture chart of Things that Make Us Feel Better (Week 11, Day 3). In the activity plan focused on feeling scared, there is discussion of things a little bear did in response to feeling scared, based on the book *When I Feel Scared* by Cornelia Maude Spelman (Week 20, Day 2). Activity plans focused on feeling embarrassed (Week 16) or nervous (Week 21) include concrete reminders of ways to use deep breathing and other self-control techniques introduced in prior activities related to self-regulation.

Helping children consider how others might be feeling is an integral part of the curriculum's attention to emotion knowledge. In an early activity, for example, children are invited to look at a big smile on the caregiver's face and respond to two questions: "How might I be feeling right now? What about my face tells you how I might be feeling right now?" (Week 10, Day 3). Later activities use role plays with puppets, pictures, and a shared book reading to help children consider what another person might be feeling and thinking (Weeks 28–31). Activities related to perspective-taking indicate that facial expressions and body postures are not always accurate indicators of how someone is feeling. There also is implicit communication of this idea. For example, the wording of the questions cited earlier suggests a facial expression could mean different things ("How might I be feeling . . ." versus "How am I feeling. . . .").

Being Responsible

The importance of taking responsibility for our behaviors is introduced early in the curriculum with information on how to make good choices (Self-Regulation Week 5, Day 1). The concept is broadened in later activities to include content on decision-making (Week 33) and setting goals (Week 32). Acting responsibly is applied to situations that involve change (Week 34) and basic safety (Weeks 35 and 36). The activity plans on this topic offer specific scenarios, pictures, and books for children to discuss plus practice opportunities.

Some Follow-Up Reminders for Children

- Taking turns means we are cooperating. (Week 4, Day 2)
- There are different ways we can share things when we play together. (Week 3, Day 3)
- We can help others by doing something useful for them. (Week 7, Day 3)
- There are many different feelings. We can have different feelings about the same thing. (Week 9, Day 2)
- When we feel sad or lonely there are things we can do to help ourselves feel better. (Week 10, Day 3)
- When we feel angry there are things we can do to calm down. (Week 11, Day 2)

Integration with Other Areas

Many activity plans in other domains promote social and emotional learning. For example, activities in Social Studies provide attention to working with a partner (Week 23, Day 4) and making choices (Week 29, Day 4). A three-week focus on moving includes guidance on saying goodbye to friends and making friends in a new setting (Social Studies Weeks 38–40). Also, Creative Expression activities in Week 29 include attention to social-emotional topics, such as facial expressions included in Our Feelings poster (Week 29, Day 2).

Building on the Activity Plans

Social and emotional learning is an ongoing process that benefits from thoughtful staff actions in all aspects of daily life in a classroom. Below are some suggestions for additional steps staff may take to optimally promote children's social-emotional skills.

More Practices for Promoting Social-Emotional Development

Each of the "more practices" suggested in the User Guide for Self-Regulation also supports children's social-emotional development. The practices include an organized classroom with predictable routines and clear expectations for children's behavior. Social and emotional learning is also promoted with the following practices:

- model strong social-emotional skills by labeling your own emotions, objectively discussing problem-solving steps you use, and showing kindness and respect to adults and children
- respond promptly and sensitively to child signals of distress in order to foster child trust and confidence in the relationship with the caregiver
- offer verbal praise for a child's spontaneous demonstration of a target behavior such as waiting for a turn or initiating positive interactions with a peer
- provide informal coaching to a child faced with a problem by gently asking questions in the problem-solving chart posted in the classroom (Week 5, Day 3)
- help a child say how he/she is feeling by jointly discussing different emotions in the poster of facial expressions (Week 10, Day 2)
- accept children's emotions (positive and negative) by showing awareness through verbalizations or gestures
- remind children of how Tucker the Turtle calms down (Week 12, Day 2)
- remind children of key ideas in getting along with others and managing our emotions (see Some Follow-Up Reminders for Children on prior page)
- support children's emerging friendships by acknowledging and encouraging play within pairs or small groups
- remember that the process of developing social-emotional skills is similar to developing self-regulation: lots of practice is required and mistakes will be made.

Strengthening Your Understanding of Social-Emotional Development

Here are some suggestions for reflecting on the curriculum's plans for promoting children's social-emotional development.

- What are your ideas about why children with strong social-emotional skills in the preschool years tend to have positive transitions to kindergarten and stronger reading and mathematics performance in first grade? How might the curriculum's foundation skills in

social-emotional development help children succeed in school and in life?

- A goal of the curriculum is to expose children to a variety of emotions. What are your ideas about why it is helpful for children to know there are many different feelings and that it is "okay" to experience different feelings? Why might particular emotions be of interest and relevant to different children?
- The activity plans include numerous opportunities for children to practice their emerging skills in getting along with others (examples: Week 2, Day 3; Week 4, Day 3; Week 6, Day 3). What staff practices do you think are most helpful to children while they try out ways to establish and maintain positive relationships with their peers?
- Use the "More Practices for Promoting Social-Emotional Development" list to reflect on your classroom's current practices. Are there suggestions you would like to use or enhance in your classroom?

Select an activity plan in any of the curriculum's seven other preschool-age domains that also promotes social-emotional development (look for Also Promotes in the left column of the first page of the activity plan). In what ways does the plan you selected promote children's social and emotional learning?

Signs of Distress in Children

The following information was prepared for this Guide by child and adolescent psychiatrist Patricia Lester, M.D., a noted authority on children in military families. She is Director of the Nathanson Family Resilience Center and the Jane and Marc Nathanson Family Professor of Psychiatry at the University of California Los Angeles.

Preschool-age children may be particularly vulnerable to disruptions in family routines and relationships, parental separations including deployment or divorce, and parental well-being. Early childhood program staff may notice changes in behavioral or emotional responses, such as the following:

- increased upset or resistance during transition to or from the center
- increased clinginess with caregivers or objects
- worries about parent well-being or safety
- backward movement (regression) in developmental milestones, such as toileting, independent sleep, and language use
- increased difficulty in regulating behaviors during routine activities, such as meal and nap times, and in interactions with peers or adults
- increased difficulty with cognitive tasks, such as keeping focused on classroom activities.

Persistent signs of distress might warrant referral to primary care, family support, or child health specialists for possible behavioral health evaluation. These signs may include the following:

- unexplained crying or tearfulness
- persistent tantrums and/or disruptive behaviors
- increased sleep difficulties or disturbances (waking, bad dreams)
- persistent eating difficulties or change in eating patterns
- increased aggressive behaviors towards others
- persistent fears about transition separations from caregivers.

Endnotes

1 Denham, S. A., Zinsser, K. M., & Brown, C. A. (2013). The emotional basis of learning and development in early childhood education. In O. N. Saracho & B. Spodek (Eds.), *Handbook of research on the education of young children, 3rd ed.* (pp. 67–88). New York: Routledge.

2 NICHD Early Childhood Research Network. (2004). Multiple pathways to early academic achievement. *Harvard Educational Review, 74*, 1–29.

3 Blair, C. (2002). School readiness: Integrating cognition and emotional in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist, 57*, 111–127.

4 Domitrovich, C. E., Moore, J. E., Thompson, R. A., & Collaborative for Academic, Social, and Emotional Learning. (2012). Interventions that promote social-emotional learning in young children. In R. C. Pianta, W. S. Barnett, L. M. Justice, & S. M., Sheridan (Eds.), *Handbook of early childhood education* (pp. 393–415). New York, NY: The Guilford Press. See also: Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2000). Prosocial foundations of children's academic achievement. *Psychological Science, 11*, 302–306.

5 Rivers, S. E., Tominey, S. L., O'Bryon, E. C., & Brackett, M. A. (2013). Developing emotional skills in early childhood settings using Preschool RULER. *The Psychology of Education Review, 37*, 19–25. See also: Brackett, M. A., Rivers, S. E., Reyes, M. R., & Salovey, P. (2012). Enhancing academic performance and social and emotional competence with the RULER Feeling Words Curriculum. *Learning and Individual Differences, 22*, 218–224.

6 McClelland, M. M., Ponitz, C. C., Messersmith, E. & Tominey, S. (2010). Self-regulation: The integration of cognition and emotion. In B. Overton (Ed.), *Handbook of lifespan development* (Vol. 4 pp. 509–553). Hoboken, NJ: John Wiley and Sons. See also: Spinrad, T. L., Eisenberg, N., Cumberland, A., Fabes, R. A., Valiente, C., Shepard, S. A., & Guthri, I. K. (2006). Relation of emotion-related regulation to children's social competence: A longitudinal study. *Emotion, 6*, 498–510.

7 Graziano, P. A., Reavis, R. D., Keane, S. P., & Calkins, S. D. (2007). The role of emotion regulation in children's early academic success. *Journal of School Psychology, 45*, 3–19.

8 Weissberg, R. P. Durlak, J. A., Domitrovich, C. E., & Gullotta, T. P. (2015). Social and emotional learning: Past, present, and future. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice* (pp. 3–19). New York: Guilford.

9 Wentzel, K. R. (1991). Social competence at school: Relation between social responsibility and academic achievement. *Review of Educational Research, 61*, 1–24.

10 Nix, R. L., Bierman, K. L., Heinrichs, B. S., Gest, S. D., Welsh, J. A., & Domitrovich, C. E. (2016). The randomized controlled trial of Head Start REDI: Sustained effects on developmental trajectories of social–emotional functioning. *Journal of Consulting and Clinical Psychology, 84*, 310–322. See also: Bierman, K. L., Nix, R. L., Heinrichs, B. S., Domitrovich, C. E., Gest, S. D., Welsh, J. A. et al. (2014). Effects of Head Start REDI on children's outcomes 1 year later in different kindergarten contexts. *Child Development, 85*, 140–159.

11 Weissberg et al. (2015).

12 Domitrovich, C. E., Cortes, R. C., & Greenberg, M. T. (2007). Improving young children's social and emotional competence: A randomized trial of the preschool "PATHS" curriculum. *The Journal of Primary Prevention, 28*, 67–91. See also: Webster-Stratton, C., Reid, M. J., & Stoolmiller, M. (2008). Preventing conduct problems and improving school readiness: Evaluation of The Incredible Years teacher and child training programs in high-risk schools. *Journal of Child Psychology and Psychiatry, 49*, 471–488.

13 Webster-Stratton, Reid, & Stoolmiller (2008).

14 Izard, C. E., Trentacosta, C. J., King, K. A., & Mostow, A. J. (2004). An emotion-based prevention program for Head Start children. *Early Education and Development, 15*, 407–422.

15 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items.* Washington, DC: Author.

16 www.virtuallabschool.org/preschool/social-emotional

17 Center on the Social and Emotional Foundations for Early Learning. (2013). Promoting the social emotional competence of young children module 2: Social emotional teaching strategies. Retrieved from http://csefel.vanderbilt.edu/modules/module2/handout6.pdf

18 Thompson, R. A., & Lagattuta, K. H. (2006). Feeling and understanding: Early emotional development. In K. McCartney & D. Phillips (Eds.), *Blackwell handbook of early childhood development*. (pp. 317–337). Malden, MA: Blackwell Publishing.

19 Rhoades, B. L., Warren, H. K., Domitrovich, C. E., & Greenberg, M. T. (2011). Examining the link between preschool social-emotional competence and first grade academic achievement: The role of attention skills. *Early Childhood Research Quarterly, 26*, 182–191.

20 Denham, S. A., Bassett, H. H., Way, E., Kalb, S., Warren-Khot, H., & Zinsser, K. (2014). "How would you feel? What would you do?" Development and underpinnings of preschoolers' social information processing. *Journal of Research in childhood Education, 28*, 182–202. See also: Curby, T. W., Brown, C. A., Bassett, H. H., & Denham, S. A. (2015). Associations between preschoolers' social–emotional competence and preliteracy skills. *Infant and Child Development, 24*, 549–570.

21 Denham, S. A., & Couchoud, E. A. (1990a). Young preschoolers' ability to identify emotions in equivocal situations. *Child Study Journal, 20*, 153–169. See also: Denham, S. A., & Couchoud, E. A. (1990b). Young preschoolers' understanding of emotions. *Child Study Journal, 20*, 171–192.

22 Robin, A. L., Schneider, M., & Dolnick, M. (1976). The Turtle Technique: An extended case study of self-control in the classroom. *Psychology in the School, 13*, 449–453.

Social Studies

3–5 Years

Helping children learn about their immediate and larger social and physical worlds occupies a respected role in the field of early childhood education. Social studies is at the center of one of the pioneering and most prominent preschool curricula in the U.S., developed at Bank Street College of Education.[1] The Bank Street curriculum includes numerous opportunities for children to learn about the world in which they and others live, beginning with attention to families and then larger communities.[2]

The social studies learning goals for 3 to 5-year-old children generally seek to foster a positive sense of identity and provide early foundations of active civic participation, especially a value of diversity across people, families, and communities. A basic understanding of how communities are organized socially and physically is also a common learning goal in pre-kindergarten social studies. A sense of change over time in how people live is often emphasized.[3]

The early childhood program setting offers rich opportunities for children to engage in social studies learning. For many children, the program may be their first ongoing participation in a community outside the home.[4] It is a forum for helping children strengthen their sense of identity, particularly the understanding that they are unique yet also share some similarities with other children.[5]

The early childhood program also offers here-and-now opportunities to learn about meaningful differences across families, participate in individual and shared decision-making, become familiar with helpers in the program community, and understand the larger physical setting in which the program is located.

Children's here-and-now experiences are no longer limited to the immediate settings in which they participate. Technologies now provide virtual connections to faraway places, people, and events.[6] In addition, the life experiences of children in military families—first-hand exposure to different types of communities, living in and amongst families with direct connections to a wide range of other places—likely support young children's emerging understandings of diversity and concept of a larger world. The staff of child development centers also may represent cultural backgrounds that can be readily shared in formal and informal ways with children.

Foundation Skills

- Positive sense of self
- Appreciation of individual and family diversity
- Knowledge of social and physical environments
- Concepts of time

Technologies now provide virtual connections to faraway places, people, and events.

NAEYC Accreditation. National and many state standards for pre-kindergarten programs include social studies. Unfortunately, there is little research on child outcomes and best practices in early childhood social studies. The curriculum's foundation skills related to social studies are based on the program standards and accreditation criteria of the National Association for the Education of Young Children (NAEYC).

Providing opportunities for children to develop a positive identity and sense of belonging in a classroom community are among the NAEYC standards related to social studies.[7] The NAEYC standards also emphasize opportunities for children to: understand different forms of diversity; explore social roles in families and workplaces; understand

the community in which they live, including its physical characteristics; understand how people affect their environment (e.g., recycling); understand economic concepts; engage in discussions about fairness, responsibility, and related topics; and contribute to the well-being of their classroom and community.

Link to VLS. The Virtual Laboratory School's course on Self and Cultural Understanding offers information and resources related to different forms of diversity (Lessons 1 and 3), anti-bias practices in classrooms (Lesson 4), identity development (Lessons 1 and 2), and disabilities (Lesson 4).[8] The Preschool Cognitive Development course includes information on alternatives to stereotypical images of individuals and families (Lesson 4) and a video on embracing culture (Lesson 5).[9] The Family Engagement course offers information on how to honor diversity in families (Lesson 1) and background information on children in military families (Lesson 5).[10]

How ELM Promotes Social Studies Knowledge

The exploration of topics in social studies begins with the child's immediate world, including self and family, and moves outward to home, neighborhood, different types of communities, and eventually to earlier times, such as pioneer days. Activity plans are organized into five areas: Respecting Our Differences (Weeks 1–4); Appreciating Our Families (Weeks 5–9); Exploring Where We Live (Weeks 10–30 and Weeks 35–44); and Exploring Time (Weeks 31–34). Activity plans directly related to social studies are offered on days 4 and 5 of each week.

The exploration of social studies begins with children and their families and moves outward to homes, neighborhoods, different types of communities, and earlier times.

Respecting Our Differences

The **uniqueness of each individual** is introduced in activity plans for Weeks 1–4. Attention is focused on similarities and differences among children in the classroom and other persons. There are opportunities for children to consider differences in physical characteristics by creating a full-body tracing (Week 1); reflecting on variations in hair and clothing, including color (Week 2); and learning about physical disabilities (Weeks 3 and 4).

Discussions are designed to help children understand how persons can have different and similar characteristics. For example, discussion of the book *When Charley Met Emma* by Amy Webb focuses on how Charley and Emma are different than some other children. Charley likes to draw quietly, and Emma gets around in a wheelchair. The two children also like to do some of the same things, including drawing and playing tag (Week 3, Day 4). In the following week, an ELM activity plan introduces ways to move from place to place by using a wheelchair, a walker, or braces (Week 4, Day 4).

Appreciating Our Families

The idea of individual uniqueness is extended to **differences across families** beginning in Week 5. To encourage reflection on families, children describe what they like to do with their families or with a member of their family (Week 5) and how families may be the same or different (Week 6). **Grandparents** (Weeks 7–8) also are explored through guided discussions, reflecting on how children are the same and different from their

grandparents, and the creation of a class book about grandparents.

The curriculum recommends the designation of an ongoing family culture shelf or protected space in the classroom for displaying photographs, artifacts, or items, such as chopsticks, that represent **family cultures**. One or two sessions also are recommended for family members to visit to share stories about their families, including culturally-based practices (Week 9). The Week 7 activity plan recommends communicating in advance with family members to agree upon a plan for their visit. The following questions are suggested as possible ways to facilitate discussions with children:

- Where were the older members of your family born?
- How does your family celebrate special holidays or other events?
- What do you remember that was special about growing up in your family?
- Tell us about your family's favorite thing to eat.

Exploring Where We Live

The content of activity plans in Social Studies moves from child and family to home and neighborhood beginning in Week 10. Attention is given to **different types of homes**, including apartments and duplexes, and to inside and outside characteristics of homes (Weeks 10 and 11). Photographs are a core part of the information discussed with children.

Hands-on opportunities for children to learn more about homes include use of a shoebox to create a miniature version of a home (Week 11) and an identification of items in the classroom's housekeeping center that are similar to items at home (Week 10).

Places that can be found in different neighborhoods are discussed in Week 13. Places such as a library, fire station, police station, and grocery store are explored in the book *Places in My Neighborhood* by Shelly Lyons. Children also discuss places they have seen in their own neighborhood.

The neighborhood in which the child development center is located is used as a shared or common framework for a concrete investigation of neighborhood features, including spatial arrangements. Small groups of children are invited to work together with shoeboxes to create a specific place in the center's neighborhood (example: fire station) in Week 14. In a follow-up activity, children use a map of the center's neighborhood created by classroom staff to put their shoebox places in their approximate locations on the classroom's floor (Week 15).

Communities are complex settings physically and socially. **ELM introduces many dimensions of a community** beginning in Week 16. The topics reflect NAEYC standards.

The curriculum's exploration of community begins with how several neighborhoods can make up a community (Week 16). Children work in "neighborhood groups" within the classroom as they use blocks and other building manipulatives to create several pretend neighborhoods that make up a community.

Large cities (Week 17) and small towns and farming communities (Week 18) also are explored. Pictures are used to describe how people live, work, and get around in different communities.

For example, a description of skyscrapers includes photographs of an elevator's doors, buttons, and cables (Week 17, Day 4). Photographs also are used to describe silos, barns, and other structures found in smaller communities. Hands-on learning opportunities include the creation of a cityscape (Week 17, Day 5) and drawing a picture of a farm building (Week 18, Day 4).

Characteristics of a community's **geography** are described beginning in Week 19. Specific attention is given to types of bridges (Week 19, Day 5) and railroad tracks (Week 20, Day 4). There is an opportunity for children to make replicas of items found in their community and to describe their item in a later session (Week 21, Day 4). Children sing a song as they make a pretend community by placing their item on the rug/floor (Week 21, Day 5).

Attention to **community helpers** is focused on people who work in the child development center or community, including children's family members (Weeks 22–23). Tools and worker uniforms are explored. Opportunities for children to connect the content to their own interests and experiences include pretending to be various community helpers in different areas of the classroom (Week 23, Day 5).

The topic of community helpers is extended to **include uniforms and patches worn by community helpers in Weeks 24 and 25**. Children are given clues about clothing worn by community helpers while listening to *Clothesline Clues to Jobs People Do* by Kathryn Helling and Deborah Hembrook (Week 25, Day 5). Classroom staff may wish to supplement the activities with guest visitors and other resources.

The theme of "how communities work" includes discussion of official and unofficial **rules** that are likely familiar to many children (Week 26). Information about rules for adults in the center, such as washing hands before cooking meals and signing children in and out of the center, serves as an introduction to this topic. Week 26, Day 5 emphasizes practical reasons for adhering to rules, such as wearing seat belts and respecting parking places designated for people with physical disabilities. The "how communities work" theme also includes information on how people get news through newspapers, television, radio, and internet resources (Week 27). Children work as a group to construct a brief article with a classroom staff member about something that happened in the classroom.

Two highly valued aspects of American society are introduced in Weeks 28–30. **Songs and symbols of our nation**—the American flag, the pledge of allegiance, and the national anthem—are described in child-friendly terms. The meanings of "brave" and "respect" are discussed as part of this topic (Week 28). The concept of **voting** is introduced through voting experiences in the classroom regarding book reading, physical activity choices, table toy options, and a name for a classroom teddy bear (Week 30). The activity plans offer guidance on how to help children accept a majority vote that does not reflect their own choice.

ELM offers four activity plans on **economic concepts** beginning in Week 35. This content reflects the NAEYC expectation that early childhood classrooms introduce economic concepts to young children. ELM uses the book *Ox-Cart Man* by Donald Hall to explore the idea of selling items for money and using money to buy things. In a follow-up activity, children have an opportunity to use pretend coins to buy pretend scoops of ice cream (Week 35, Day 5). The curriculum also gives attention to differences between needs and wants, and explains that some families may use food banks and soup kitchens when they do not have enough money to meet basic needs (Week 36).

What happens **when families move** from one place to another is explored in 15 activity plans beginning in Week 38. The activities feature the experiences of two children (Jason and Nakita) who each move to a different home, neighborhood, and child development center. In the ELM curriculum, children explore different ways items can be moved from one place to another, and have hands-on opportunities to pretend to pack a box of items. The activity plans describe emotions associated with moving, including the possibility of feeling sad, and offer suggestions of ways to say goodbye and become connected with new people and places.

Children explore **different kinds of transportation** in Weeks 41–44. Topics include transportation that moves on land, water, and through air. The activity plans give attention to a wide range of transportation including a bus, canoe, passenger and freight trains, airplanes, helicopters, boats, and ships. The use of animals and walking are also discussed as ways to move from one place to another.

Exploring Time

The **concept of time is approached in several different ways** with children (Weeks 31–32). There is discussion of the amount of time it takes to do things in the daily schedule (comparison of snack and outdoor time) and use of a stopwatch to measure how long it takes to jump 10 and 20 times. Pictures and drawings of activities are posted within a daily schedule to draw attention to yesterday, today, and tomorrow.

The concept of time is broadened in Week 32 to include change over time in the development of a child, chicken, dog, tree, and plants with the help of the book *The Growing Story* by Ruth Krauss. There also is an opportunity to review main ideas from a study of life cycles in the science domain.

The activity plans for Weeks 33–34 explore **life in earlier periods of time**. There are opportunities for children to discuss how pioneers lived long ago while reading *My First Little House Books: A Little Prairie House* by Laura Ingalls Wilder.

Children are invited to play games popular among children in pioneer days in Week 34. These include *marbles*, *jump rope*, *hopscotch*, *Pick-up Sticks*, and *Who Has the Button?* Children also are introduced to the work of a historian and have an opportunity to ask questions and look at pictures for some answers.

Integration with Other Areas

Social studies content is closely connected to self-regulation and social-emotional development. Children's success in using their experiences in the early childhood program setting to learn about self and others requires relationship skills and regulation of emotions and behaviors. For example, the problem-solving steps introduced in a social-emotional activity plan ask children to consider the fairness of possible solutions to a problem (Social-Emotional Week 5, Day 3). The curriculum's use of the same time block for implementing activity plans in self-regulation, social-emotional, and social studies is intended to strengthen connections across content in these interrelated areas.

Building on the Activity Plans

Social studies is a broad content area that can be expanded or deepened in many different ways. Cultural and linguistic responsiveness is particularly appropriate in pursuing social studies topics with children. The following suggestions may help classroom staff make the most of the activity plans.

More Practices for Promoting Social Studies Knowledge

- Take the initiative to learn about children's home languages and cultures. Provide books for children to look at and enjoy that reflect their cultures and home languages. Offer an opportunity and support for a child(ren) to teach other children several words in their home language.
- Provide daily opportunities for children to participate in dramatic play that fosters positive self-concepts and encourages use of language and relationship skills.
- Display children's artwork and drawings in the classroom to help promote a sense of community within the group. Displaying children's work also helps foster children's self-esteem and respect for individual differences.
- Promote a better understanding of the geography of your center's community by providing a simple map and photographs of nearby buildings and spaces. Encourage children's drawing of maps of their classroom, home, center, and community.
- Encourage role play with community helpers' clothing, military uniforms and patches to help children gain a better understanding of the range of work roles in their community.
- Compare and contrast rules in your classroom and your community. Ask children to describe to a pretend "new person" how the rules help them stay safe and respect others.
- Create a weekly or monthly classroom newsletter for families. Share the newsletter with children to promote a better understanding of how the news relays important information.
- Informally discuss bravery in our nation and how bravery is shown by military parents and families. Example from outdoor play: "You are very brave when you climb to the top of the slide. Who else is brave in your family? How?"
- Support opportunities for children to vote during center play by providing slips of paper and a ballot box. Encourage children to vote with a show of hands during outdoor time when deciding on a game to play together or changes in the rules of a game.
- Create a picture timeline for each child to strengthen understanding of the passage of time. Include 3–4 snapshots of children from infancy through preschool age (provided by families). Discuss how children have changed over time.
- Promote a better understanding of the past by sharing pictures, items, and stories from the past that correspond to current activities in the classroom. Example: When discussing a child's favorite toy, share information about the toys you played with when you were a child.

Strengthening Your Understanding of Social Studies

- This *Guide* offers a summary of resources related to social studies available at the Virtual Lab School (VLS). Identify one or two VLS lessons that align with social studies topics introduced in ELM. How could the VLS information and resources be used to extend and further develop the topics you selected?
- The concept of fairness is of keen interest to many preschool-age children (example: equitable access to and amount of time at a

classroom's computer station). Fairness is a consideration in the problem-solving steps introduced to children (Social-Emotional Week 5, Day 3) and among the topics the NAEYC program standards encourage children to discuss. What opportunities exist in your daily schedule and routines for engaging children in a discussion of fairness and related issues?

- What resources can you draw upon in your classroom and center to help children appreciate the cultures, languages, and values of children and staff in their classroom or center?

Endnotes

1 Biber, B., Shapiro, E., & Wickens, D. (1971). *Promoting cognitive growth: A developmental-interaction point of view.* Washington, DC: National Association for the Education of Young Children.
2 Cuffaro, H. K., & Nager, N. (2013). The developmental-interaction approach at Bank Street College of Education. In J. L. Roopnarine & J. E. Johnson (Eds.), *Approaches to early childhood education, sixth edition* (pp. 261-278). New York: Pearson.
3 National Council for the Social Studies (2010). *National curriculum standards for social studies: A framework for teaching, learning, and assessment*. Silver Spring, MD: Author.
4 Epstein, A. S. (2014). *The intentional teacher: Choosing the best strategies for young children's learning, revised edition.* Washington, DC: National Association for the Education of Young Children.
5 Bredekamp, S. (2014). *Effective practices in early childhood education: Building a foundation.* New York: Pearson.
6 Seefeldt, C., Castle, S., & Falconer, R. C. (2014). *Social studies for the preschool/primary child.* New Jersey: Pearson.
7 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items.* Washington, DC: Author.
8 www.virtuallabschool.org/preschool/self-culture
9 www.virtuallabschool.org/preschool/cognitive
10 www.virtuallabschool.org/preschool/family-engagement

Creative Expression

3–5 Years

The creativity of young children spans many forms of expression in early childhood programs, including imaginative play, music, drawing, painting, collage construction, block construction, writing (usually via dictation), music, and movement. Assessment of creativity in young children is challenging and, unfortunately, there is little rigorous research on strategies for supporting creative expression in early childhood programs. Music appears to have received the most relative attention. ELM's foundation skills for creative expression are based on NAEYC program accreditation criteria.

Research indicates that children's music experiences are linked to prosocial behavior[1] and related social-emotional outcomes.[2] Effects of planned music experiences on children's academic outcomes are mixed. A preschool music and movement curriculum was found to impact children's communication (but not receptive language or phonological awareness) skills,[3] whereas a study of a different music curriculum pointed to positive impact on children's print awareness but not concepts of print.[4] An experimental study of a brief preschool music enrichment program found no non-music cognitive benefits.[5]

Foundation Skills

- Appreciation of art, music, drama, and dance
- Knowledge of creative processes
- Skills that support creative expression

NAEYC Accreditation. The National Association for the Education of Young Children (NAEYC) accreditation criteria indicate that young children should have varied opportunities to gain appreciation of art, music, drama, and dance in ways that reflect cultural diversity. Programs also are to offer varied opportunities for children to learn new concepts and vocabulary related to these four areas of creative expression and to have many and varied open-ended opportunities and materials to express themselves creatively. In addition, children are to have varied opportunities to develop and widen their repertoire of skills that support artistic expression.[6]

Link to VLS. The Virtual Lab School preschool course on Creative Expression notes that creativity is a trait that exists in everyone, and the preschool years are an optimal time to develop an individual's creativity (Lesson 1). The course describes supports for creative work, including the availability of spaces for exploring and learning, a respect for children's work, and carefully chosen materials (Lesson 3). Adaptations for children with special needs are described (Lesson 3). Attention is given to music from different cultures and genres, and to games that encourage dramatic emotional expressions, including acting out scenes from storybooks (Lesson 2).[7]

How ELM Promotes Creative Expression

ELM provides opportunities for children to learn about and engage in creative expression in art, music, drama, and dance. **Creativity is defined for children as using an idea to make or do something new**. Children tour various centers in their classroom to suggest and discuss how a center can be used in creative ways (Week 1). Pretend experiences are used frequently to facilitate awareness of creative expression. Early in the curriculum, for example, children imagine themselves as artists pretending to do things an artist might do: paint a picture, play a musical instrument, sing a song, dance, or use clay to make something (Week 5, Day 1). Later that same week, children have an opportunity for hands-on experiences with artistic expression.

Pretend experiences are used frequently to facilitate awareness of creative expression.

Creating Art

ELM introduces a broad understanding of how art can be created by using a book entitled *The Dot* by Peter H. Reynolds. In the book, a girl named Vashti tells her teacher that she cannot draw. Vashti's teacher shows how art can be created by using dots. In the ELM activity plan, children then have the opportunity to create their own art with dots (Week 5, Day 3). There are more **hands-on experiences in creating art** when tools are introduced the following week. The tools include paintbrushes, sponges, and stencils. Children also explore paints, markers, pencils, and clay as artistic media (Week 7). Additional direct experiences in creating art include using felt shapes and shape stencils to create designs and experimenting with mixing colors (Week 36). Children have opportunities to work in small groups to create a mural, make a print with bubble wrap, create a drawing with different types of tools, and to make a collage with pieces of paper (Week 48).

The curriculum offers guidance for children to **look closely at art to identify and discuss features of artistic creations**. Attention is given to types of lines and shapes used in paintings (Weeks 35 and 36), and to creative uses of illustrations and text in books written and designed by Steve Jenkins and Robin Page (Week 37). **Awareness of art in homes, museums, and communities** is also promoted (Week 49). **Ways in which art can tell stories** are explored, including children's use of their own artwork to tell a story (Week 50).

Creating Dance

ELM's approach to dance emphasizes different types of movements. Children are invited to practice moving forward and backward, and to stretch and bend, as they listen to classical music. Children also roll an ELM-developed activity cube that depicts different dance movements (jumping, gliding, spinning, hopping) and then incorporate the movement shown on the top of the cube into a dance (Week 11).

Activity plans focused on **dancing to music** involve moving in response to music tempo, volume, and instrumental sounds. Several sets of activities invite children to dance to segments of the *Carnival of the Animals* by French composer Camille Saint-Saëns by pretending to move like a particular animal, including a lion, elephant, fish, bird, and swan (Week 24). The work of a choreographer is introduced when **children are encouraged to create their own dance movements**, giving careful attention to the use of arms and legs (Week 25).

Doing Drama

The **practice of imitating what another person or animal looks or sounds like is used to introduce the concept of drama**. To practice voice imitation, children listen to, and then pretend to be, one of the characters in the story *Goldilocks and*

the Three Bears. Children also work with a partner to imitate each other's facial expressions and then follow a leader in imitating body movements (Week 29).

Subsequent activity plans offer a more advanced approach to dramatic expression by inviting children to **pretend to be a particular person and to enact randomly selected activities** (Week 30). In one activity, children use the voice, facial expressions, and body movements of an individual shown in a picture selected by a child (examples: veterinarian, grandparent). Questions are available in the activity plan to help children imagine, and then act like, one of the individuals. Children also take turns rolling an ELM-developed activity cube that depicts a different activity, such as soccer or swimming, on each side. The child who rolls the cube describes the randomly chosen activity, and then the entire group is invited to pretend to do the activity. There is an opportunity for children to reflect on their experiences in acting out the activities.

There are opportunities to learn about the **use of props** when imitating characters in familiar nursery rhymes. For example, mittens are provided for imitating characters in the *Three Little Kittens* nursery rhyme (Week 31, Day 3). The **role of costumes** in dramatic expression is introduced when children are invited to use masks to act out the story of *The Three Billy Goats Gruff* by Paul Galdone (Week 40).

Making Music

ELM helps children broaden and deepen their understanding of music through a focus on **different musical instruments, including children's voices**. An activity plan explains how **a song can be created by putting music and words together**. The words and the tune of *The Wheels on the Bus* are explored separately and then together. The curriculum provides opportunities for children to look at pictures of different instruments, hear and compare their sounds, and pretend to play the instrument (Week 16). There are descriptions of how musical sounds can be made by using air, moving a bow or fingers on strings, and by striking or shaking an instrument (Week 17).

Additional instruments are introduced in Week 18 when children **explore the sounds of a marching band** by listening to *The Military Band Salute to the Services*. Children are invited to pretend to play a band instrument while marching around the classroom. **Awareness of beat and volume** is promoted by encouraging children to move scarves fast and slow, and to clap their hands, in response to music.

Integration with Other Areas

Creative expression is part of activity plans in other areas promoted by ELM. For example, children are supported in creating cityscapes to strengthen their understanding of skyscrapers (Social Studies Week 17, Day 5). Shapes are put together to make new shapes (Mathematics Week 9, Day 3). Children are encouraged to create silly or nonsense words as part of learning about the sounds of words (Language/Literacy Week 23, Day 4).

Building on the Activity Plans

More Practices for Promoting Creative Expression

- Intentionally vary the types of art materials available for child-initiated activities.
- Encourage children to use music to accompany activities such as cleaning up, washing hands, or creating art.
- Encourage small groups of children to create music and dance together. Several children can make music as several other children dance with the music.
- Emphasize the creative process rather than the final product when children create art.
- Use new experiences as opportunities to create art. Example: After taking children to a museum, park, or other area of interest, encourage children to create art or drama based on something they saw or heard.
- Encourage children to use dance or drama to transition from one activity to another activity. Example: "Let's pretend to be our favorite animal as we take turns finding a seat on a carpet square."
- Use clean recycled materials to encourage artistic expression. Examples: paper bags, egg cartons, craft tubes. Discuss how materials are used again rather than being thrown away.
- In a nonjudgmental manner, point out differences in children's artwork when they use the same materials in different ways. Example: "Raina used blue paint to make a bird with long flowing feathers. Connor used blue paint to make swirls of clouds in the sky."
- Invite families to create an art piece with children at home. Encourage children to share the art piece with others in your classroom.
- Encourage children to use natural outdoor items to create art. Examples: leaves, sticks, flowers.

Strengthening Your Understanding of Creative Expression

- Process art provides children with open-ended experiences for exploring their own ideas and interests. Product art encourages children to follow directions and copy a model. What are your ideas about the advantages of process art over product art?
- ELM promotes the idea that each child and family is unique. ELM also seeks to help children appreciate diversity in family traditions and cultures. What are your ideas about how creative expression can be used to promote these ideas?
- A goal of the curriculum is to broaden children's awareness of different emotions. How might creative expression be used to help children to identify or communicate different feelings?

Endnotes

1 Kirschner, S., & Tomasello, M. (2010). Joint music making promotes prosocial behavior in 4-year-old children. *Evolution and Human Behavior*, 31, 354–364.

2 Ritblatt, S., Longstreth, S., Hokoda, A., Cannon, B.-N., & Weston, J. (2013). Can music enhance school-readiness socioemotional skills? *Journal of Research in Childhood Education*, *27*, 257–266. See also: Winsler, A., Ducenne, L., & Koury, A. (2011). Singing one's way to self-regulation: The role of early music and movement curricula and private speech. *Early Education and Development*, *22*, 274–304.

3 Yazejian, N., & Peisner-Feinberg, E. S. (2009). Effects of a preschool music and movement curriculum on children's language skills. NHSA Dialog, 12, 327–341.

4 Register, D. (2001). The effects of an early intervention music curriculum on prereading/writing. *Journal of Music Therapy*, *38*, 239–248.

5 Register (2001).

6 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items.* Washington, DC: Author.

7 www.virtuallabschool.org/preschool/creative

Science

3–5 Years

Preschool-age children are well known for asking "why" and "how" questions about nearly everything in their worlds. Their questions reflect a strong interest in understanding how things work, and often pertain to people, objects, behaviors, or connections they are unable to figure out on their own.

Preschoolers' inquisitive nature is a tremendous resource for early childhood programs. Children's "eager to learn" orientation is well suited to exploring science[1] as well as other content domains. Asking and exploring answers to questions are central processes in science. The content of science embraces preschoolers' curiosities about worms, insects, butterflies, frogs, elephants, farm animals, deserts, forests, water, soil, rocks, the sun, the moon, stars, the weather, seasons, and much more.

There is growing interest in improving the quality of science education in early childhood programs. Studies show that young children are more capable of understanding scientific concepts than experts have long assumed.[2] It is widely believed that early childhood programs can provide children with a strong foundation for the study of science in elementary school and beyond.[3] A workforce that excels in science, technology, engineering, and mathematics (STEM) is increasingly viewed as essential to the economic strength and overall well-being of the U.S.

Young children are more capable of understanding scientific concepts than experts have long assumed.

The ELM curriculum's foundation skills are informed primarily by content standards. There is limited research on specific preschool science competencies that predict later achievement. A growing number of studies offer guidance on how to promote children's science knowledge.

Foundation Skills

- Inquiry skills, including use of the five senses and tools
- Knowledge of
  - living things
  - animal habitats
  - life cycles
  - earth and space

Research on science education programs for young children points to the importance of emphasizing key concepts or "big ideas" in science.[4] Studies also indicate it is beneficial to provide focused attention to each step of an investigation.[5] Typical steps include planning and predicting, acting and observing, and reporting and reflecting. A preschool science program that is the basis for the PBS *Sid the Science Kid* program introduces one step at a time, with an active exploration role for children related to each step.[6] Children's use of science journals is also recommended by experts as a way to help children develop visual representations of their work.[7]

Evidence suggests that a combination of implicit and explicit teaching practices has a stronger effect on children's science learning than use of implicit teaching strategies alone.[8] Examples of implicit practices include the teacher describing children's behavior during their exploration of ice cubes, and commenting on and asking questions about children's actions and statements. An implicit approach does not direct children's play or provide an activity. A combination of implicit and explicit strategies involves the teacher providing the types of implicit supports described above plus a brief (10 minute) activity at the beginning

of a session on concepts and vocabulary. Other research suggests that children benefit from explicit teaching combined with hands-on guided discovery experiences.[9]

Experts recommend the use of information books in science and other domains.[10] Information books generally provide child-friendly definitions of science vocabulary and visuals that show how to communicate findings from an investigation. Some evidence suggests that using both storybooks (fiction) and information books is beneficial for children's understanding of science and social studies.[11]

Outdoor settings are highly appropriate for learning about science. Short nature walks through a center's play yard can help children identify many living things. Families may also take their children on outings, such as an "insect hunt," to find as many insects as possible and record what is found.[12] Garden projects provide many participation opportunities for community volunteers and extended family members.[13] Garden projects also can help children learn more about a culture, such as Native American connections with the earth.[14]

NAEYC accreditation. ELM's activity plans related to science are fully consistent with program standards and accreditation criteria of the National Association for the Education of Young Children.[15] The NAEYC standards include science content on living and nonliving things, earth and sky, and states of materials (example: melting). The NAEYC science content standards also call for children to learn about the five senses, to use simple tools to observe objects, and to collect and represent data. The science standards note the importance of engaging children in thinking, questioning, and reasoning about observations.

Link to VLS. The curriculum's science domain extends information provided in the Virtual Laboratory School's (VLS) course on Cognitive Development. The VLS content gives attention to children as natural observers (Lesson 4) and to experiments and children's problem-solving explorations (Lesson 6).[16]

How ELM Promotes Science Knowledge

ELM's science activities are sequenced to help children move gradually from simple to more complex understandings of science concepts. Basic information is offered in several different ways before more advanced concepts are introduced. Each week novel words related to science and everyday life are introduced and used in suggested conversations with children.

Children often maintain misconceptions about science topics.

Helping children understand accurate information is emphasized because children often maintain misconceptions about science topics. For example, many children think butterflies enter this world as baby butterflies and that plants get all of their energy from the soil.

The curriculum's activity plans recommend that classroom staff include new concepts in their talk with children. For example, staff are encouraged to use the word "observe" rather than "look" when inviting children to engage in an observation of something.

The science center's materials can serve as a stand-alone opportunity for exploratory learning. Children who find it challenging to participate in an activity may be more productively engaged in the corresponding center activity. A possible arrangement is for one staff member to lead an activity with a group of children while, at the same time, a different staff member works with another

group of children to facilitate exploration of center activities.

Activity plans in the science domain are designed to promote children's understanding of the five topics listed in the foundation skills: science process skills, living things, habitats, life cycles, and earth/space.

Being a Scientist

The process of doing science is introduced in a series of activity plans called "Being a Scientist." Activities focus on how investigations include the use of:

- **inquiry skills**, such as observing, comparing, and experimenting,
- our **five senses**, and
- **tools** for observing and measuring.

ELM emphasizes inquiry skills that are commonly included in state early learning standards.[17] These include observing, describing, comparing, representing, predicting, experimenting, and recording. Experiences with comparison skills include categorizing objects and, in later activities, identifying similarities and differences in the life cycles of a range of living things, including frogs, butterflies, and bean seeds. Early attention to representation includes simple charts where children's observations are recorded (Weeks 3 and 4). In later activities, children use science journals to draw pictures of their discoveries.

Child-friendly explanations and experiences are offered for each scientific concept and novel word. The process of experimenting, for example, is described in part as "trying to change something" so we can better understand it. Children put ice in different locations (sun, shade) to see what happens to ice in particular conditions (Week 3).

Our five senses—seeing, hearing, touching, tasting, and smelling—are explored as ways to learn about something (Weeks 8–9). The activities include attention to accommodations for people who have a disability related to one of the five senses. For example, an activity describes how a person with limited or no vision can use their other senses to investigate a topic (Week 9, Day 1).

During the first few weeks of the curriculum, children use inquiry skills and their five senses with ice and magnets. The aim is to provide repeated experiences with specific inquiry skills and to help children understand that inquiry skills are useful in learning about different types of objects. Although the activities provide some information on characteristics of ice and magnets, the primary goal is to help children understand how inquiry skills and their five senses can be used to learn about something of interest.

Tools for observing and for measuring are introduced through hands-on experiences (Week 10). There are opportunities for children to learn how a magnifying glass and a balance scale can be used as part of an investigation.

Exploring Living Things

The first week of activities on living things introduces the four **basic characteristics of living things** (eat/use food, breathe, grow, make another like itself). Center activities include opportunities for children to sort picture cards of things into living and nonliving categories.

Photographs accompany short descriptions of **key characteristics of living things**, such as how animals use lungs to breathe. Photographs also are used to show sources of food for animals and plants. Children are briefly introduced to the idea that plants can generate their own food by using energy from the sun.

Animals are compared by different characteristics, such as body covering, body parts, and how they move (Week 13). One week of activity plans offer a closer look at **insects** (Week 14). Most children are likely familiar with insects but they may have limited understanding of how they use their six legs, how they use their body parts, and their physical characteristics. Children also compare different types of animals through the use of charts, photographs, and games. For example, there is an *I Spy* game with insect picture cards that is intended to draw children's attention to differences across insects.

Children are introduced to the **use of a science journal** for learning how to represent and record what they observe (Week 14). In one of the early uses of the journal, for example, children are encouraged to draw a picture of an insect after learning about different insect body parts.

ELM's emphasis on parts of living things shifts to plants in Week 15. The activity plans give attention to parts of a plant. Outdoor exploration is again encouraged.

The topic of dinosaurs is explored in 10 sessions beginning in Week 46. Attention is given to characteristics and types of dinosaurs, dinosaur fossils, and how scientists learn about dinosaurs.

Exploring Life Cycles

Children are introduced to animal and plant life cycles in Weeks 19–23. Three big ideas are emphasized:

- there are different stages in a life cycle,
- some living things (such as people) take longer than other living things (such as dogs) to move from young to adult stages, and
- there are different types of animal life cycles.

The topic begins by asking children to think about their own life cycle. How are children different today than when they were babies? Changes over time in the lives of familiar animals (dog, cat) also are used to introduce the concept of a life cycle.

Picture cards are used to show specific stages of each life cycle explored in the curriculum. There are many opportunities for children to put the life cycle cards in their correct order. Activity plans also provide children with the option of **acting out** different stages of a specific living thing. Children are also able to **watch the life cycle of a bean plant** by planting, caring for, and observing a bean seed.

The idea that there are different types of animal life cycles includes attention to whether the animal was hatched from an egg (chicken, penguin) or looked like its parents when it was born (dog, cat, people). Another major type of animal life cycle is metamorphosis (butterfly, frog).

Exploring Habitats

ELM seeks to broaden children's understandings of living things during a six-week investigation of animal habitats in Weeks 26–28 and 32–34. Children are introduced to animals that live in **water, desert, forest, polar, rainforest, and mountain habitats**. There are opportunities for children to use inquiry skills to compare habitats and to learn how animals and plants live in each type of habitat. For example, in Week 26 children observe shells that can be found in a water habitat. Children are invited to describe how the shells are different from one another.

Science journals are again used to record and represent animals. For example, after being introduced to animals that live in a forest habitat,

children are invited to make a classroom book in which they represent an animal that may live in a forest habitat (Week 28).

Children use what they learn about how a desert animal can survive in the hot sun to better understand how desert animals get food and water (Week 27, Day 3). Children are also invited to move like animals that live in different habitats, including a fish, snake, camel, and fennec fox.

An activity related to mountain habitats (Week 34) introduces children to the first and third parts of a K-W-L chart. The chart is a teaching strategy for helping children organize what they know (K), what they want to know (W), and what they have learned (L). K-W-L charts are used extensively beginning in kindergarten or first grade. The activity plan does not introduce the K-W-L chart terminology to children. The focus on the first and third parts of the chart (K and L) is intended as a cognitive task in organizing information, similar to reflecting on what was learned from an investigation. The first and third parts of the K-W-L chart are also offered as a preliminary introduction to a tool children are likely to use often in elementary school and beyond.

Exploring Earth and Space

There are three content clusters of activity plans related to earth and space. The first grouping pertains to **day and night, weather,** and **seasons** of the year (Weeks 37–39). A hands-on learning activity includes shadow-making (Week 37). Science journals, photographs, and a globe are among the items used in various activities.

The second cluster explores **recycling**, **soil**, and **rocks** (Weeks 42–44). Activities aimed at helping children learn about recycling include sorting recyclables and making a trash collage. The introduction to soil includes uses of soil for making building materials, such as tile flooring. The exploration of rocks includes opportunities for children to find and examine rocks with a magnifying glass. Science journals are used to represent rock characteristics.

Integration with Other Areas

Some concepts introduced in science are part of learning activities in several other areas. The concept of a life cycle is revisited in content related to the passage of time, particularly changes that take place over time with persons, animals, and plants (Social Studies Week 32, Day 5), for example. Children are invited to use their five senses to think of things that make them feel disgusted (Social-Emotional Week 18, Day 3). Creative Expression activities in which children are encouraged to dance like different animals (Week 24) connect to a Science activity on how animals move (Week 13, Day 3).

Building on the Activity Plans

Below are some suggestions for enhancing children's science knowledge as well as your understanding of how the curriculum is designed to promote children's science skills.

More Practices for Promoting Science Knowledge

- Provide a rich variety of information books related to science concepts. Add new and replace current books on a regular basis, based on children's varying interests.
- Encourage children to explore their world by using their five senses. Example: "I see you are working with green clay. What does the clay smell like? What does the clay feel like?"
- Provide daily opportunities, both indoors and outdoors, for children to observe and explore their environment with scientific tools.
- Use science vocabulary throughout the day to promote children's understanding. Example: "We usually have cheese for lunch on Monday. Today is Monday. What do you predict we will have for lunch today?"
- To help promote inquiry skills, plant a garden in the play yard or a small planter box. Encourage children to observe, describe, compare, predict, represent, and ask questions while using a hands-on approach to learning.
- Provide opportunities for hands-on exploration of nature. Include regular observations of living things in their environment.
- Regularly ask open-ended questions to promote critical thinking skills. Examples: "What might happen if…?" "What do you think about…?"
- Provide clipboards, paper, and drawing tools to promote children's skills in recording and representing their ideas in all areas of the classroom.
- Encourage exploration of items and materials in new and different ways. Example: Add animals or natural items to the block center or water table.
- Point out characteristics of natural habitats explored by children. Example: "Our playground has many different plants and trees. What kinds of animals might like to live here?"
- Help children use a chart to record changes in the weather, temperature, changes in plants and/or animals, and movement of the sun during the day. The activity will promote children's predictions and observations of patterns and change.
- Encourage daily recycling in your classroom to promote children's awareness of responsible care of the earth.

Strengthening Your Understanding of Science Knowledge

- Studies show the benefits of using a combination of explicit teaching and hands-on guided discovery opportunities to promote children's understanding of science concepts and vocabulary. What are your ideas about why this combination is a best practice in early childhood programs? What might be some downsides of using explicit teaching only or child-initiated discovery only?
- A core practice in early childhood programs is to build on children's current understandings of a topic. Review several activity plans in the science domain to identify specific ways the plan attempts to find out what children know (such as asking questions and skill practice opportunities) and offers options for adapting (such as scaffolding tips) to what children understand. Are there additional ways the

activity plans you reviewed could find out and build on what children currently understand about a concept?

- What steps might you take to become accustomed to using science terms, such as "observe" instead of "look," in your regular talk with children?
- The activity plans on the five senses (Weeks 8–9) introduce children to glasses as a way people can accommodate the limitation of one of their senses. This information is linked to the theme of respecting diversity in the social studies domain. What are some other ways respect for diversity might be incorporated into science activities?

Endnotes

1 Lee, P. C. (2012). The human child's nature orientation. *Child Development Perspectives*, *6*, 193–198.
2 French, L. A., & Woodring, S. D. (2013). Science education in the early years. In O. N. Saracho & B. Spodek (Eds.), *Handbook of research on the education of young children, third edition* (pp. 179–196). New York: Routledge. See also: Trundle, K. C., & Saçkes, M. (Eds.). (2015). *Research in early childhood science education*. New York, NY: Springer.
3 National Research Council. (2007). *Taking science to school: Learning and teaching science in grades K–12*. Washington, DC: National Academy Press.
4 Vosniadou, S. (2009). Science education for young children: A conceptual-change point of view. In O. A. Barbarin & B. H. Wasik (Eds.), *Handbook of child development and early education* (pp. 554–557). New York: Guilford.
5 Conezio, K., & French, L. A. (2002). Science in the preschool classroom: Capitalizing on children's fascination with the everyday world to foster language and literacy development. *Young Children*, *57*, 12–18. See also: Hong, S.-Y., & Diamond, K. E. (2012). Two approaches to teaching young children science concepts, vocabulary, and scientific problem-solving skills. *Early Childhood Research Quarterly*, *27*, 295–305.
6 Gelman, R., Brenneman, K., Macdonald, G., & Román, M. (2009). *Preschool Pathways to Science (PrePS)™: Facilitating scientific ways of thinking, talking, doing, and understanding*. Baltimore, MD: Brookes Publishing.
7 Gelman, R., & Brenneman, K. (2004). Science learning pathways for young children. *Early Childhood Research Quarterly*, *19*, 150–158.
8 Hong & Diamond (2012).
9 Greenfield, D. B., Jirout, J., Dominguez, X., Greenberg, A., Maier, M., & Fuccillo, J. (2009). Science in the preschool classroom: A programmatic research agenda to improve science readiness. *Early Education and Development*, *20*, 238–264. See also: Peterson, S. M., & French, L. (2008). Supporting young children's explanations through inquiry science in preschool. *Early Childhood Research Quarterly*, *23*, 395–408.
10 Mantzicopoulos, P., & Patrick H. (2010). "The seesaw is a machine that goes up and down": Young children's narrative responses to science-related informational text. *Early Education and Development*, *21*, 412–444.
11 Gonzalez, J. E., Pollard-Durodola, S., Simmons, D. C., Taylor, A. B., Davis, M. J., Kim, M., & Simmons, L. (2011). Developing low-income preschoolers' social studies and science vocabulary knowledge through content-focused shared book reading. *Journal of Research on Educational Effectiveness*, *4*, 25–52.
12 Mantzicopoulos, P., Patrick, H., & Samarapungavan, A. (2013). Science literacy in school and home contexts. *Cognition and Instruction*, *31*, 62–119.
13 Starbuck, S., & Olthof, M. R. (2008). Involving families and community through gardening. *Young Children*, *63*, 74–79.
14 McWilliams, M. S., Maldonado–Mancebo, T., Szczepaniak, P. S., & Jones, J. (2011). Supporting Native Indian preschoolers and their families: Family-school-community partnerships. *Young Children*, *66*, 34–41.
15 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items*. Washington, DC: Author.
16 www.virtuallabschool.org/preschool/cognitive
17 Greenfield et al. (2009).

Physical/Health

3–5 Years

Most attention to physical development in the early years focuses on skills that enable children to move their bodies, or parts of their bodies, in space. Early childhood experts are interested in gross motor skills that involve large muscle movements of trunk and limbs, including balance and coordination. They also are interested in fine motor skills, especially the coordination of small muscle movements needed for drawing, writing, and manipulation of other types of objects, such as zippers of a coat or jacket. Gross and fine motor skills develop together, but strengths in one set of motor skills are not a guarantee of strengths in the other.[1]

Children's motor development is linked to academic and social outcomes.[2] Gross motor skills are associated with social skills, including participation in sports and games.[3] It seems that children who are clumsy may be rejected socially or not feel confident to play in sports or games that involve gross motor skills.[4] Fine motor skills are more strongly associated with academic achievement,[5] perhaps because fine motor abilities facilitate literacy experiences, such as letter and name writing, as well as math experiences, such as counting objects.

In addition to academic and social outcomes, the development of motor skills is widely viewed as a main path to good physical health. Increases in child and youth obesity have heightened national interest in ways to promote early physical activity for purposes of improving health and well-being. Studies indicate that children benefit from regular unstructured and structured physical activity, but the appropriate balance of structured and unstructured physical activity time is not clear.[6]

Pediatric experts recommend generous amounts of free playtime,[7] although playground time alone appears to be an insufficient approach to increasing levels of physical activity and improving physical development.[8] Research indicates that teacher-directed physical activities can lead to positive effects on children's physical activity levels.[9] The physical activity components of effective preschool-age programs focused on improving health indicators include jumping, hopping, galloping, skipping, ball bouncing, kicking, catching, and throwing for large motor development and art activities for fine motor skills.[10]

Foundation Skills

- Motor development
- Good health practices

Playground time alone appears to be an insufficient approach to promoting physical activity and development.

Good health practices involve more than regular physical activity. Exploratory research suggests that lessons on healthy nutrition can improve children's snack choices. One nine-lesson program included brief presentations (using food puppets), activities focused on healthy food, and open-ended questions about food choices.[11] A different six-week program, which focused on eating fruits and vegetables, involved circle time lessons and an imaginary trip each week.[12] Exploratory studies also point to the promise of activity-focused lessons on sun protection, including use of sunscreen, hats, and sleeved shirts.[13]

NAEYC Accreditation. The National Association for the Education of Young Children (NAEYC) program accreditation criteria[14] indicate that programs should provide opportunities and materials to improve children's fine motor development, particularly small muscle movements (usually fingers) that support functions such as writing, grasping small objects, and fastening

clothing. Children also should have opportunities for large motor experiences that stimulate a variety of skills, enhance sensory-motor integration, and develop controlled movements, such as balance, strength, and coordination. The purpose of large motor experiences is also to help children learn physical games with rules and structure.

NAEYC's accreditation criteria regarding good health practices include learning about nutrition such as sources of food and healthy foods; awareness of safety rules in the classroom and opportunities to practice safety procedures; and awareness of healthy practices, such as washing fruits and vegetables, exercise, handwashing, and toothbrushing.

Link to VLS. The Virtual Lab School's preschool course on Physical Development[15] describes how physical development is connected to brain growth and development (Lesson 1) and factors that influence patterns of physical development (Lesson 2). Indoor (Lesson 3) and outdoor (Lesson 4) environments and experiences that support physical development also are described. The VLS preschool course on Healthy Environments[16] includes guidance on proper hygiene, such as reducing the spread of germs (Lesson 2) and toileting (Lesson 3). The course also presents information on daily health checks (Lesson 4), nutrition and physical activity (Lesson 5), mental health needs (Lesson 6), and special health needs (Lesson 7).

How ELM Promotes Physical Development and Good Health Practices

ELM promotes gross and fine motor development in activity plans entitled *Moving Our Bodies*. Support for good health practices is offered in activity plans that use the *Staying Healthy and Safe* title. Attention to these two broad sets of foundation skills alternates across ELM's 50 weeks, as shown in the *Sequence of Skills and Learning Goals* chart. Decisions about physical development and health topics to include in ELM were significantly influenced by NAEYC accreditation criteria because research on best practices in this area is relatively thin.

Moving Our Bodies

ELM activity plans introduce and reinforce vocabulary that is directly and indirectly related to motor development. For example, early in the curriculum there are descriptions of and practice with personal space and activity space. Children are invited to follow the leader around indoor and outdoor activity spaces to learn their boundaries. The concept of movement is introduced as moving our body, or part of our body, from one place to another place (Week 4, Day 4). The word "movement" is used often in physical activities, including dance in Creative Expression activity plans. Children are introduced to concepts such as around (in walking around obstacles) as part of activities.

Most locomotor movements are introduced and practiced through games. Children learn to gallop as part of a *Gallop and Get* game (Week 6) and alternate running and jogging in a game called *Zig Zag* (Week 16), for example. In addition to galloping, running, and jogging, gross motor movements emphasized in ELM include jumping, marching, hopping, skipping, kicking, throwing, and catching. After a gross motor movement has been introduced and practiced, it often is combined with one or more other movements in an activity, such as moving a ball or bean bag away from our body by kicking and also by throwing (Week 32). Movement combination activities provide children with opportunities to reflect on different ways their bodies can accomplish similar goals (example: moving a ball away from us by kicking and by throwing), or work together to accomplish a

larger goal (example: arm and leg movements in an underarm throw aimed at a target).

Stability is discussed and practiced often in movement activities. The concept of balance is introduced early in the curriculum (Week 8) with experiences in balancing our bodies using different limbs and positions. Cards that show different poses are used to help children learn and practice balancing their bodies in various stationary positions. Stability also is described and practiced in locomotor situations, such as a *Walking and Turning* game in Week 9.

Variations in physical activities that involve a slight increase in challenge are common elements of activity plans. For example, there are opportunities to throw and catch different types of objects: balls, scarves, beanbags (Week 17), and to kick an object from a stationary position, and then from a one-step moving position (Week 31).

Children are encouraged to reflect on and increase their awareness of how parts of their body move in movement activities, including contrasting movements. Activity plans draw attention to how our arms and legs (including knees) move while marching and walking (Week 5), for example. Each part of multi-part movements is introduced by itself before it is combined with other parts. Children practice each sequential element of an underarm throw (Week 18), for example, before throwing an object. Where to focus our eyes during movements receives consistent attention. Reminders such as "look at the ball" are paired with explanations, so children can learn how visual attention contributes to the success of a movement.

ELM's support of fine motor development occurs mostly in activities offered in other areas of the curriculum. Holding up a specified number of fingers is a common request in math activities, particularly early in the curriculum. There are frequent opportunities to draw and write letters, and to move objects, such as counters, with fingers. Awareness of differences in hand size (length) is promoted in activities focused on measurement beginning in Week 24. A Physical/Health activity in Week 25 involves using clothespins or fingers to pick up pretend pizza toppings.

Staying Healthy and Safe

Children are introduced to basic care practices that contribute to healthy bodies. Topics include the importance of teeth and how to brush teeth (Week 11), exercise (Week 12), rest (Week 13), eating nutritious foods (Weeks 19–20 and 24–25), and the importance of protecting our skin from sun (Week 33) and visiting a healthcare provider and dentist (Week 34). The activity plans include the **use of engaging books,** such as Mitchell Sharmat's *Gregory the Terrible Eater* to introduce discussion of picky eating (Week 24, Day 5). The topic of what we eat is introduced with the story of Frances, who wants to eat only bread and jam (Week 20, Day 4). There is an opportunity for children to make a pretend pizza with items from each type of food in Week 25.

Children also are introduced to a broad range of ways to stay safe, which is defined as not getting hurt or sick or into danger (Week 3, Day 4). The topics include germs and how not to spread germs (Weeks 1 and 2), what to do during classroom emergencies (Week 3), and keeping safe while riding a bike and in a vehicle (Week 27).

Vocabulary related to health and safety is emphasized. For example, the word protect (to keep something safe from harm) is used in connection to many actions, such as wearing a helmet and sunscreen. **The concept of a routine is applied to steps in health care practices**, such as handwashing, use of tissue for a sneeze, and brushing teeth. The idea of a routine is introduced in Week 1 as part of a Self-Regulation activity that emphasizes the predictability of a daily schedule.

Integration with Other Areas

Physical movements are central to numerous activities in other areas promoted by ELM, including the circle time games (Remembering and Focusing) in Self-Regulation. For example, Creative Expression activities (Week 25) invite children to be choreographers creating dance movements with specific parts of the body. The first day is arm movements only, the second day is leg movements only, and the third day is both arms and legs. Activity plans that promote the foundation skill focused on personal responsibility (Social-Emotional area) reinforce safety information introduced in the Physical/Health area. For example, children look at pictures of children in different situations and give a thumbs up or thumbs down depending on whether the situation is safe (Week 35, Day 3).

Building on the Activity Plans

More Practices for Promoting Physical Development and Good Health Practices

- Use a specific physical movement for helping children transition to/from an activity. Examples: "March to the sink to wash your hands when I say your name." "Jump to the table."
- Invite children to incorporate a specific physical movement into an existing outdoor game. Example: When playing hide-and-seek, invite children to gallop to their hiding spot.
- Designate an outside area and target for throwing and kicking practice, perhaps alternating days so some are "throwing days" and others are "catching days." Provide one or more boxes for children to use as targets.
- Integrate turning and bending into dance movements. Encourage children to add turning, bending, marching, and/or jumping into their dance.
- Share with families the instructions for games played in physical activities. Example: *Gallop and Get* (Week 6, Day 5) may appeal to many families for use at home.
- Provide cones during an outside time and encourage children to decide how they would like to use the cones. Examples: Walk around the cones, hop to one cone, run to the next, and gallop to a third cone.
- Draw children's attention to how they are balancing their bodies as part of yoga poses.
- Acknowledge children's good health practices. Examples: "You are resting quietly on your cot." "There is something from all the types of food on your plate."

Strengthening Your Understanding of Physical Development and Good Health Practices

- There is wide variation in when children reach specific physical development milestones. As noted in the Introduction to the ELM Curriculum section of this *Guide*, there can be a 15-month spread in the fine motor skills of five-year-old children.[17] Reflect on children you have known or children in your current classroom. What developmental differences do you notice, and what adaptations might be appropriate to consider for accommodating the differences in classroom activities?
- Select an activity plan in one of the other areas of development that also promotes physical well-being or health. (Look for Also Promotes in the left column on the first page of an activity plan.) In what ways does the activity plan intend to help children strengthen their physical development or good health practices?

- Motor skills are linked to social skills, as described earlier. To what extent do you see examples of this connection among children in your classroom or among children you have known?

Endnotes

1 Pagani, L. S., & Messier, S. (2012). Links between motor skills and indicators of school readiness at kindergarten entry in urban disadvantaged children. *Journal of Educational and Developmental Psychology*, *2*, 95–107.
2 Cameron, C. E., Cottone, E. A., Murrah W. M., & Grissmer, D. W. (2016). How are motor skills linked to children's school performance and academic achievement? *Child Development Perspectives*, *10*, 93–98.
3 Wilson, A., Piek, J. P., & Kane, R. (2012). The mediating role of social skills in the relationship between motor ability and internalizing symptoms in pre-primary children. *Infant and Child Development*, *22*, 151–164. See also: Pagani & Messier (2012)
4 Skinner, R. A., & Piek, J. P. (2001). Psychosocial implications of poor motor coordination in children and adolescents. *Human Movement Science, 20*, 73–94.
5 Grissmer, D., Grimm, K. J., Aiyer, S. M., Murrah, W. M., & Steele, J. S. (2010). Fine motor skills and early comprehension of the world: Two new school readiness indicators. *Developmental Psychology*, *46*, 1008–1017.
6 Ward, D. S., Vaughn, A., McWilliams, C., & Hales, D. (2010). Interventions for increasing physical activity at child care. *Medicine and Science in Sports and Exercise*, *42*, 526–534.
7 Burdette, H. L., & Whitaker, R. C. (2005). Resurrecting free play in young children: Looking beyond fitness and fatness to attention, affiliation, and affect. *Archives of Pediatric and Adolescent Medicine*, *159*, 46–50.
8 Goodway, J. D., Ozmun, J. C., & Gallahue, D. L. (2013). Motor development in young children. In O. N. Saracho & B. Spodek (Eds.), *Handbook of research in early childhood education, third edition* (pp. 89–101). New York: Routledge.
9 De Marco, A. C., Zeisel, S., & Odom, S. L. (2014). An evaluation of a program to increase physical activity for young children in child care. *Early Education and Development, 26*, 1–21.
10 Ward et al. (2010). See also: Goodway, J.D., & Branta, C. F. (2003). Influence of a motor skill intervention on fundamental motor skill development of disadvantaged preschool children. *Research Quarterly for Exercise and Sport*, *74*, 36–46. Robinson, L. E., Webster, E. K., Logan, S. W., Lucas, W. A., & Barber, L. T. (2011). Teaching practices that promote motor skills in early childhood settings. *Early Childhood Education Journal*, *40*, 79–86.
11 Warash, B. G., Fitch, C., & Bodnovich, K. (2003). Snack choices: Helping young children make decisions. *Journal of Family & Consumer Sciences*, *95*, 60–64.
12 Witt, K. E., & Dunn, C. (2012). Increasing fruit and vegetable consumption among preschoolers: Evaluation of 'color me healthy'. *Journal of Nutrition Education and Behavior*, *44*, 107–113.
13 Gritz, E. R., Tripp, M. K., James, A. S., Harrist, R. B., Mueller, N. H., Chamberlain, R. M., & Parcel, G. S. (2007). Effects of a preschool staff intervention on children's sun protection: Outcomes of sun protection is fun! *Health Education and Behavior*, *34*, 562–577. See also: Loescher, L. J., Emerson, J., & Taylor, A. (1995). Educating preschoolers about sun safety. *American Journal of Public Health*, *85*, 939–943.
14 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items.* Washington, DC: Author.
15 www.virtuallabschool.org/preschool/physical-development
16 www.virtuallabschool.org/preschool/healthy-environments
17 Kim, H., Murrah, W. M., Cameron, C. E., Brock, L. L., Cottone, E. A., & Grissmer, D. (2014). Psychometric properties of the teacher-reported motor skills rating scale. *Journal of Psychoeducational Assessment*, *33*, 640–651.

Sequence of Skills and Learning Goals 3–5 Years

This chart provides a map of curriculum content across 50 weeks in each of the eight areas promoted by ELM in the preschool-age years. It offers an efficient overview of foundation skills and learning goals that are described in greater detail in the Areas Promoted by ELM section of this *Guide*.

The chart shows ELM's incremental support of skills that are building blocks of success in school and life. Developmentally appropriate practice in early childhood programs recognizes that many aspects of children's development and learning follow predictable sequences. Abilities and knowledge build on prior development and learning. The ELM Curriculum's activities are aligned with well-documented pathways of skill acquisition in domains, such as motor development, and in content areas, such as social studies.

For example, Weeks 1–3 in Language/Literacy show progression from identifying single sounds to several sounds to sequences of sounds. The ability to pay close attention to sounds in words is a critical early literacy skill that does not emerge naturally. As another example, the content in Social Studies begins with a focus on self and peers (Weeks 1–4), broadens the lens to include families (Weeks 5–9), and then explores larger contexts of homes, neighborhoods, and communities (Weeks 10–18).

Children benefit from frequent practice, review, and extension of emerging skills. These learning opportunities are also shown in the chart.

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 1	WEEK 2	WEEK 3	WEEK 4
LANGUAGE/ LITERACY	**Phonological awareness** • Single sounds **Print knowledge** • Parts of a book • Proper care of books	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Several sounds	**Oral language** • Word knowledge including prepositions and relational words • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Sequence of sounds	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Rhyming words
MATHEMATICS	**Number knowledge** • Counting items	**Number knowledge** • Counting items • Groups of items	**Number knowledge** • Verbal counting • Groups of items • Number words • Concept of more	**Geometric and spatial knowledge** • Circle, square, triangle
SELF-REGULATION	**Self-control** • Routines	**Self-control** • Rules	**Self-control** • Listening and talking	**Concentrate** • Paying attention
SOCIAL-EMOTIONAL	**Relationship skills** • Types of play • Asking to play	**Relationship skills** • Asking to play	**Relationship skills** • Sharing an item	**Relationship skills** • Cooperating
SOCIAL STUDIES	**Appreciation of individual diversity** • Same and different • Unique	**Appreciation of individual diversity** • Same and different	**Appreciation of individual diversity** • Unique	**Appreciation of individual diversity** • Abilities and adaptations
CREATIVE EXPRESSION	**Appreciation of art, music, drama, and dance** • Forms of creative expression	**Appreciation of art, music, drama, and dance** • Creative ideas	See Mathematics	See Physical/Health
SCIENCE			**Inquiry skills** • Observing, describing, comparing, predicting, experimenting, recording	**Inquiry skills** • Observing, describing, comparing, predicting, experimenting, recording
PHYSICAL/ HEALTH	**Good health practices** • Germs • Handwashing	**Good health practices** • Germs	**Good health practices** • Safety rules and routines • Emergency procedures	**Motor development** • Physical activity safety • Walking and marching

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 5	WEEK 6	WEEK 7	WEEK 8
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Rhyming words	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Rhyming words **Print and letter knowledge** • Alphabet, letters, and words	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Print knowledge** • Sentences **Letter knowledge** • Letter B	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Compound words **Letter knowledge** • Letter C
MATHEMATICS	**Geometric & spatial knowledge** • Rectangles and triangles	**Geometric & spatial knowledge** • Squares and triangles **Number knowledge** • Groups of items • Counting • "More" and "fewer"	**Number knowledge** • 1-to-1 counting • Counting items and actions	**Number knowledge** • Counting • Equal groups • 1-to-1 counting
SELF-REGULATION	**Self-control** • Stop and think	**Self-control** • Waiting patiently	**Self-control** • Waiting patiently	**Executive function** • Focusing
SOCIAL-EMOTIONAL	**Relationship skills** • Social problem solving	**Relationship skills** • Social problem solving	**Relationship skills** • Being helpful	**Relationship skills** • Being friendly
SOCIAL STUDIES	**Appreciation of family diversity** • Family uniqueness	**Appreciation of family diversity** • Special family activities	**Appreciation of family diversity** • Special family activities • Grandparents	**Appreciation of family diversity** • Grandparents and older family members
CREATIVE EXPRESSION	**Knowledge of creative processes** • Artist • Types of art **Skills that support creative expression** • Creating art	**Knowledge of creative processes** • Art tools **Skills that support creative expression** • Using art tools to create art	**Knowledge of creative processes** • Tools for painting, drawing, and sculpting **Skills that support creative expression** • Using tools to create a painting, drawing, and sculpture	
SCIENCE				**Inquiry skills** • Five senses
PHYSICAL/ HEALTH	**Motor development** • Walking and marching	**Motor development** • Galloping	**Motor development** • Hopping	**Motor development** • Balancing

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 9	WEEK 10	WEEK 11	WEEK 12
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Compound words **Letter knowledge** • Letter O	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Compound words **Letter knowledge** • Letter A	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Compound words (assess) **Letter knowledge** • Letters B, C, O, and A	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Review letters B, C, O, and A
MATHEMATICS	**Geometric and spatial knowledge** • Four basic shapes	**Geometric and spatial knowledge** • Variations of four basic shapes	**Number knowledge** • Last number counted tells how many (cardinality) • Sorting and counting items • Forming groups of a given quantity	**Number knowledge** • Last number counted tells how many (cardinality) • Forming groups of a given quantity
SELF-REGULATION	**Executive function** • Paying close attention	**Concentrate** • Deep breathing	**Concentrate** • Yoga poses	**Executive function** • Listening • Remembering
SOCIAL-EMOTIONAL	**Relationship skills** • Compliments	**Emotion knowledge** • Different kinds of feelings • Happy and silly	**Emotion knowledge** • Sad • Ways to feel better	**Emotion knowledge** • Angry • Managing anger
SOCIAL STUDIES	**Appreciation of family diversity** • Different cultures	**Knowledge of physical environments** • Types of homes	**Knowledge of physical environments** • Home characteristics	**Knowledge of physical environments** • Home characteristics
CREATIVE EXPRESSION	See Mathematics and Science		**Skills that support creative expression** • Dance movements	See Mathematics
SCIENCE	**Inquiry skills** • Five senses	**Inquiry skills** • Tools		**Knowledge of living things** • Characteristics of living things
PHYSICAL/ HEALTH	**Motor development** • Turning and balancing	**Motor development** • Bending and balancing	**Good health practices** • Oral health	**Motor development** • Muscles • Exercising

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 13	WEEK 14	WEEK 15	WEEK 16
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Syllables **Letter knowledge** • Letter X	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Syllables **Letter knowledge** • Letter S	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Syllables **Letter knowledge** • Letter P	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Syllables (assess) **Letter knowledge** • Review letters X, S, and P
MATHEMATICS	**Number knowledge** • Counting and "how many" (assess) • Sorting items • Forming and comparing groups • Numerals 0, 1, 2, 3, and 4	**Pattern knowledge** • Identifying and making ABAB patterns	**Pattern knowledge** • Making and extending ABAB patterns	**Number knowledge** • Comparing groups • Numerals 5, 6, 7, and 8
SELF-REGULATION	**Executive function** • Watching and remembering	**Concentrate** • Deep breathing • Yoga poses	**Executive function** • Listening and remembering • Listening and watching	**Executive function** • Watching and remembering • Listening and remembering
SOCIAL-EMOTIONAL	**Emotion knowledge** • Bored	**Emotion knowledge** • Disappointed • Excited	**Emotion knowledge** • Shy	**Emotion knowledge** • Embarrassed
SOCIAL STUDIES	**Knowledge of physical environments** • Neighborhood • Places in a neighborhood	**Knowledge of physical environments** • Places in the center neighborhood	**Knowledge of physical environments** • Neighborhood maps	**Knowledge of physical environments** • Community
CREATIVE EXPRESSION				**Skills that support creative expression** **Knowledge of creative processes** • Musical instruments • Songs
SCIENCE	**Knowledge of living things** • Animals	**Knowledge of living things** • Insects	**Knowledge of living things** • Plants	
PHYSICAL/ HEALTH	**Good health practices** • Rest and sleep	**Motor development** • Running and jogging	**Motor development** • Jogging and walking	**Motor development** • Throwing

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 17	WEEK 18	WEEK 19	WEEK 20
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Beginning sounds **Letter knowledge** • Letter E	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Beginning sounds **Letter knowledge** • Letter H	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Review letters X, S, P, E, and H	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Beginning sounds **Letter knowledge** • Letter M
MATHEMATICS	**Number knowledge** • Numerals 9 and 10 • Forming groups • Number after • Number list	**Number knowledge** • Number after • Number chart • Number list	**Pattern knowledge** • Simple patterns (ABAB) • Other kinds of patterns (AABAAB) • Identifying patterns	**Pattern knowledge** • Counting • Sorting • Making simple and other kinds of patterns
SELF-REGULATION	**Concentrate** • Deep breathing	**Executive function** • Listening and remembering • Watching and taking turns	**Executive function** • Watching and taking turns • Listening and remembering	**Concentrate** • Looking closely • Deep breathing
SOCIAL-EMOTIONAL	**Emotion knowledge** • Loved	**Emotion knowledge** • Disgusted	**Emotion knowledge** • Proud	**Emotion knowledge** • Scared • Frustrated
SOCIAL STUDIES	**Knowledge of social and physical environments** • City • Skyscrapers	**Knowledge of social and physical environments** • Town • Farm • Barn and silo	**Knowledge of social and physical environments** • Geography • Bridges	**Knowledge of social and physical environments** • Geography • Railroad tracks
CREATIVE EXPRESSION	**Knowledge of creative processes** • Instruments	**Knowledge of creative processes** • Marching band • Instrumental music • Beat		See Social Studies
SCIENCE	See Creative Expression	See Social Emotional	**Knowledge of life cycles** • People • Puppies and kittens	**Knowledge of life cycles** • Chickens • Penguins
PHYSICAL/ HEALTH	**Motor development** • Catching • Throwing	**Motor development** • Underarm throwing • Throwing at a target	**Good health practices** • Different types of farms food comes from	**Good health practices** • Five different kinds of healthy foods

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 21	WEEK 22	WEEK 23	WEEK 24
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Beginning sounds **Letter knowledge** • Letter R	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Beginning sounds **Letter knowledge** • Letter F	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Beginning sounds (assess) **Letter knowledge** • Letters E, H, M, R, and F	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Blending two sounds **Letter knowledge** • Letter T
MATHEMATICS	**Number knowledge** • Number list • One more	**Number knowledge** • Number list • Written numerals (assess) • Counting	**Number knowledge** • Number list • One more • Counting • Price	**Measurement knowledge** • Measuring and comparing size
SELF-REGULATION	**Executive function** • Listening and remembering • Watching and taking turns	**Executive function** • Watching and taking turns • Listening and remembering	**Concentration** • Deep breathing • Yoga poses	**Executive function** • Focusing and taking turns
SOCIAL-EMOTIONAL	**Emotion knowledge** • Nervous	**Emotion knowledge** • Lonely	**Emotion knowledge** • Guilty	**Emotion knowledge** • Thankful
SOCIAL STUDIES	**Knowledge of social and physical environments** • Geographic characteristics	**Knowledge of social and physical environments** • Community helpers	**Knowledge of social and physical environments** • Community helper tools	**Knowledge of social environments** • Community helper uniforms
CREATIVE EXPRESSION				**Knowledge of creative processes** **Skills that support creative expression** • Music • Dancing
SCIENCE	**Knowledge of life cycles** • Frogs	**Knowledge of life cycles** • Butterflies	**Knowledge of life cycles** • Bean plant	See Creative Expression
PHYSICAL/ HEALTH	**Motor development** • Jumping and landing	**Motor development** • Combinations of physical movements	**Motor development** • Shifting weight	**Good health practices** • Healthy foods

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 25	WEEK 26	WEEK 27	WEEK 28
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Blending sounds **Letter knowledge** • Letter W	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Initial sound **Letter knowledge** • Review letters M, T, R, F, and W	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Blending sounds **Letter knowledge** • Letter D	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Blending sounds **Letter knowledge** • Letter L
MATHEMATICS	**Measurement knowledge** • Measuring length and height • Ruler	**Measurement knowledge** • Measuring weight • Scales	**Number knowledge** • Splitting a group of items into two parts • Counting • One more (assess)	**Number knowledge** • Splitting a group of items into two parts • Counting
SELF-REGULATION	**Executive function** • Listening and remembering	**Concentrate** • Describing a hidden item	**Executive function** • Focusing and taking turns • Listening and taking turns	**Executive function** • Listening and remembering
SOCIAL-EMOTIONAL	**Emotion knowledge** • Different emotions	**Emotion knowledge** • Different situations, facial expressions, and emotions	**Emotion knowledge** • Different situations, facial expressions, and emotions	**Emotion knowledge** **Perspective-taking** • Another person's view
SOCIAL STUDIES	**Knowledge of social environments** • Job uniforms	**Knowledge of social environments** • Rules for adults • Laws	**Knowledge of social environments** • News	**Knowledge of social environments** • American flag • Pledge of Allegiance • National anthem
CREATIVE EXPRESSION	**Skills that support creative expression** • Dance movements			
SCIENCE		**Knowledge of habitats** • Water	**Knowledge of habitats** • Desert	**Knowledge of habitats** • Forest
PHYSICAL/ HEALTH	**Motor development** • Fine motor skills **Good health practices** • Healthy foods	**Good health practices** • Safe and not safe actions • Emergency safety	**Good health practices** • Vehicle safety • Bike safety	**Motor development** • Rolling our bodies

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 29	WEEK 30	WEEK 31	WEEK 32
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Blending sounds **Letter knowledge** • Letter N	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Blending sounds (assess) • Taking away a sound **Letter knowledge** • Letters D, L, and N	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Taking away a sound **Letter knowledge** • Letter G	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Review letters D, L, N, and G
MATHEMATICS	**Number knowledge** • Sorting • Counting • Organizing information on a chart	**Number knowledge** • Organizing information on a chart • Sorting **Geometric and spatial knowledge** • Shapes **Measurement knowledge** • Length and height	**Number knowledge** • Adding • Taking away	**Number knowledge** • Adding • Subtracting
SELF-REGULATION	**Concentrate** • Deep breathing • Yoga	**Executive function** • Watching and remembering • Listening, watching, and remembering	**Executive function** • Listening and watching • Watching and remembering	**Concentrate** • Deep breathing
SOCIAL-EMOTIONAL	**Emotion knowledge** **Perspective-taking** • Empathy	**Emotion knowledge** **Perspective-taking** • Empathy	**Emotion knowledge** **Perspective-taking** • Empathy	**Personal responsibility** • Goal
SOCIAL STUDIES	**Knowledge of social environments** • Voting	**Knowledge of social environments** • Voting	**Concepts of time** • Yesterday, today, and tomorrow • Morning and afternoon	**Concepts of time** • Amounts of time • Change over time
CREATIVE EXPRESSION	**Knowledge of creative processes** **Skills that support creative expression** • Imitating	**Knowledge of creative processes** **Skills that support creative expression** • Pretending	**Knowledge of creative processes** **Skills that support creative expression** • Imitating • Props	
SCIENCE				**Knowledge of habitats** • Polar
PHYSICAL/ HEALTH	**Motor development** • Moving around obstacles	**Motor development** • Skipping	**Motor development** • Kicking a ball	**Motor development** • Kicking and throwing a ball • Practicing different movements

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 33	WEEK 34	WEEK 35	WEEK 36
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Ending sound **Letter knowledge** • Letter K	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Ending sound **Letter knowledge** • Letter J	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Phonological awareness** • Beginning and ending sounds **Letter knowledge** • Letter Y	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Review letters K, J, and Y
MATHEMATICS	**Number knowledge** • Adding • Subtracting	**Number knowledge** • Adding • Subtracting	**Geometric and spatial knowledge** • Basic shapes **Pattern knowledge** • Simple patterns **Number knowledge** • Numerals 1–20	**Number knowledge** • Graphing • Adding • Numerals 1–20 **Geometric and spatial knowledge** • Shapes
SELF-REGULATION	**Executive function** • Watching and remembering	**Executive function** • Listening, watching, and remembering	**Concentrate** • Deep breathing • Yoga	**Executive function** • Watching and remembering • Listening and remembering
SOCIAL-EMOTIONAL	**Personal responsibility** • Making decisions	**Personal responsibility** • Making good choices	**Personal responsibility** • Staying safe	**Personal responsibility** • Staying safe
SOCIAL STUDIES	**Concepts of time** • Moving long ago	**Concepts of time** • Games played long ago	**Knowledge of social and physical environments** • Economy: making and spending money	**Knowledge of social and physical environments** • Economy: needs and wants, help for families
CREATIVE EXPRESSION			**Skills that support creative expression** • Using lines	**Skills that support creative expression** • Using shapes • Using color
SCIENCE	**Knowledge of habitats** • Rainforest	**Knowledge of habitats** • Mountain		
PHYSICAL/ HEALTH	**Good health practices** • Sun safety	**Good health practices** • Doctor • Dentist	**Good health practices** • Body parts	**Good health practices** • Bones • First aid kit

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 37	WEEK 38	WEEK 39	WEEK 40
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Letter Z	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Letter Q	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Letter I	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Letter U
MATHEMATICS	**Number knowledge** • One more (review/extend)	**Number knowledge** • Part-Whole (review/extend)	**Number knowledge** • Adding (review/extend)	**Number knowledge** • Subtracting (review/extend)
SELF-REGULATION	See Physical/Health	See Physical/Health	See Physical/Health See Social Studies	
SOCIAL-EMOTIONAL		See Social Studies	See Social Studies	
SOCIAL STUDIES	**Knowledge of social and physical environments** • Moving: kinds of moves, packing	**Knowledge of social and physical environments** • Moving: movers, moving equipment, feelings about moving	**Knowledge of social and physical environments** • Moving: new places and people, unpacking	**Knowledge of physical environments** • Types of transportation: automobiles
CREATIVE EXPRESSION	**Knowledge of creative processes** • Designing books			
SCIENCE		**Knowledge of earth and space** • Day and night	**Knowledge of earth and space** • Weather	**Knowledge of earth and space** • Seasons
PHYSICAL/ HEALTH	**Motor development** • Galloping (review/extend) • Hopping (review/extend)	**Motor development** • Balancing (review/extend) • Turning and bending (review/extend)	**Motor development** • Throwing (review/extend) • Catching (review/extend)	**Motor development** • Throwing at a target (review/extend) • Throwing and catching (review/extend)

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 41	WEEK 42	WEEK 43	WEEK 44
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Letter V	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Review letters Z, Q, I, U, and V	**Oral language** • Word knowledge • Understand, comprehend, interpret book text and illustrations **Letter knowledge** • Letter assessment	**Oral language** **Print knowledge** • Author study (Carle): writing fiction books, creating illustrations
MATHEMATICS	**Number knowledge** • Numbers (review/extend) • Counting (review/extend)	**Number knowledge** • Comparing quantities (review/extend)	**Geometric and spatial knowledge** • Shapes (review/extend)	**Geometric and spatial knowledge** • Shapes (review/extend)
SELF-REGULATION		See Physical/Health	See Physical/Health	**Executive function** • Listening and remembering **Concentrate** • Deep breathing • Describing a hidden item
SOCIAL-EMOTIONAL				**Relationship skills** • Asking to play (review/extend)
SOCIAL STUDIES	**Knowledge of physical environments** • Types of transportation: buses, bicycles, tricycles, motorcycles, trains	**Knowledge of physical environments** • Types of transportation: airplanes, helicopters, boats, ships	**Knowledge of physical environments** • Types of transportation: walking and animals	
CREATIVE EXPRESSION	**Skills that support creative expression** • Telling stories	**Skills that support creative expression** • Using puppets		See Mathematics
SCIENCE			**Knowledge of earth and space** • Recycling	**Knowledge of earth and space** • Soil
PHYSICAL/ HEALTH	**Good health practices** • Where food comes from (review/extend)	**Good health practices** • Different kinds of healthy foods (review/extend) • Resting (review/extend)	**Motor development** • Jumping and landing (review/extend) • Hopping and jumping (review/extend)	**Motor development** • Combinations of physical movements (review/extend)

Sequence of Skills and Learning Goals

3–5 Years

	WEEK 45	WEEK 46	WEEK 47	WEEK 48
LANGUAGE/ LITERACY	**Oral language** **Print knowledge** • Author study (Cannon): writing fiction books, creating illustrations	**Oral language** • Word knowledge • Understand and comprehend book text and illustrations **Letter knowledge** • Review of selected letters	**Oral language** • Word knowledge • Understand and comprehend book text and illustrations **Letter knowledge** • Review of selected letters	**Oral language** • Word knowledge • Understand and comprehend book text and illustrations **Letter knowledge** • Review of selected letters
MATHEMATICS	**Number knowledge** • Number comparison words (review/extend)	**Number knowledge** • 1-to-1 counting (review/extend)	**Pattern knowledge** • Patterns (review/extend)	**Pattern knowledge** • Patterns (review/extend)
SELF-REGULATION	**Concentrate** • Looking closely • Deep breathing **Executive function** • Watching and taking turns	**Concentrate** • Deep breathing • Yoga **Executive function** • Watching and taking turns	**Concentrate** • Deep breathing • Describing a hidden item **Executive function** • Listening and remembering	**Concentrate** • Deep breathing • Yoga **Executive function** • Listening and remembering
SOCIAL-EMOTIONAL	**Relationship skills** • Sharing (review/extend) • Cooperating (review/extend)	**Relationship skills** • Solving a problem (review/extend) • Problem solutions (review/extend)	**Emotion knowledge** • Different emotions (review/extend) • Managing feelings (review/extend)	**Emotion knowledge** • Different emotions (review/extend) • Managing feelings (review/extend)
SOCIAL STUDIES				
CREATIVE EXPRESSION				**Knowledge of creative processes** **Skills that support creative expression** • Types of art
SCIENCE	**Knowledge of earth and space** • Rocks	**Knowledge of living things** **Knowledge of earth and space** **Inquiry skills** • Dinosaurs: characteristics, fossils, how scientists learn about dinosaurs	**Knowledge of living things** **Knowledge of life cycles** **Inquiry skills** • Dinosaurs: characteristics, life cycles, how scientists learn about dinosaurs	
PHYSICAL/ HEALTH	**Motor development** • Shifting weight (review/extend) • Rolling our bodies (review/extend)			**Good health practices** • Vehicle safety (review/extend) • Bike safety (review/extend)

	WEEK 49	WEEK 50
LANGUAGE/ LITERACY	**Oral language** • Word knowledge • Understand and comprehend book text and illustrations **Letter knowledge** • Review of selected letters	**Oral language** • Word knowledge • Understand and comprehend book text and illustrations **Letter knowledge** • Review of selected letters
MATHEMATICS	**Number knowledge** • Last number counted (review/extend)	**Number knowledge** • Last number counted (review/extend) • Graphing (review/extend)
SELF-REGULATION	**Concentrate** • Deep breathing **Executive function** • Watching and taking turns	**Concentrate** • Deep breathing • Yoga **Executive function** • Watching and taking turns
SOCIAL-EMOTIONAL	**Perspective-taking** • Another person's perspective (review/extend) • Empathy (review/extend)	**Relationship skills** • Being helpful (review/extend) • Being friendly (review/extend)
SOCIAL STUDIES		See Creative Expression
CREATIVE EXPRESSION	**Knowledge of creative processes** **Skills that support creative expression** • Art in different places	**Knowledge of creative processes** **Skills that support creative expression** • Wordless picture books • Using art to tell a story
SCIENCE		
PHYSICAL/ HEALTH	**Motor development** • Obstacles (review/extend) • Galloping and skipping (review/extend)	**Motor development** • Kicking (review/extend)

Effective Use of ELM

3–5 Years

Effective use of ELM involves an efficient and predictable daily schedule, intentional use of activity plans, learning experiences that are tailored to individual children, and collaborative connections with families. Guidelines for each of these important aspects of ELM are offered below. ELM training resources are also described.

The arrangements and procedures for using ELM reflect established practices and standards in early childhood programs, feedback from ELM pilot sites, and in-depth reviews by early childhood professionals and leading experts in early care and education. The development of the ELM curriculum is described in the Introduction to the ELM Curriculum section of this *Guide*.

Planning a Daily Schedule

Guidelines

An early childhood classroom schedule typically includes three types of time use:

- **child-initiated activities** such as center times and outdoor play periods;
- **teacher-guided activities** that promote active learning in one-to-one and group settings; and
- **routine activities** such as meals/snacks, transitions, rest periods, and personal care.

In high-quality classrooms, the daily schedule reflects a coordinated balance of child-initiated play and staff-guided learning activities. This approach is fully consistent with NAEYC's position statement on developmentally appropriate practices, as described earlier in this *Guide*.

The ELM curriculum offers four daily activity plans of approximately 15 minutes each. Each plan describes a small or large group session that includes active learning and scaffolding strategies. Devoting about 15 minutes to a teacher-guided small or large group session is supported by literature on best practices in early care and education.[1]

The four 15-minute teacher-guided sessions are organized as follows:

- Language/Literacy (5 days a week)
- Mathematics (5 days a week)
- Self-Regulation (1–2 days), Social-Emotional (1–2 days), and Social Studies (2 days)

ELM Benchmarks for a Daily Schedule

1. A predictable daily schedule offers a coordinated balance of teacher-guided and child-initiated activities.
2. The four ELM large/small group activities are interspersed across the day.
3. Each ELM large/small group activity is offered by itself and not combined with another organized group activity.
4. Each of the four ELM large/small group activities is offered each day when all or most children are present.
5. ELM's language/literacy and mathematics learning activities are offered in the morning.

- Science or Creative Expression (3 days a week, rotating across weeks) and Physical/Health (2 days a week)

Offering approximately 60 minutes a day of teacher-guided activities (spread across four sessions) is generally consistent with national patterns in preschool schedules.[2] In a typical eight-hour classroom day that offers a total of about 60 minutes in teacher-guided activities, there are about 240 minutes in child-initiated activities (spread across two center times and two outdoor play periods) and a total of about 240–300 minutes of routine activities (including 120 minutes of rest), depending on child arrival and departure times.

It is strongly recommended that classroom leaders intersperse the four 15-minute sessions across a day in the described order. The order is consistent with research on the relative impact of each area on school readiness. Language/literacy and mathematics skills are consistently strong predictors of later outcomes that deserve focused attention when children are "fresh" in the morning.

Interspersing teacher-guided activities with child-initiated and routine activities helps ensure that children are not sitting for long periods of time (although many teacher-guided activities in the ELM curriculum involve some physical movement). Examples:

- offer 60 minutes of child-initiated play in centers between Language/Literacy and Mathematics sessions (15 minutes each)
- the 15-minute session that offers Self-Regulation, Social-Emotional, or Social Studies content could occur after an afternoon snack and before outdoor play
- the 15-minute session on Science, Creative Expression, or Physical/Health could occur after outdoor play

It is important for each of the four activity plans to be offered when all or most children are present. All children in a classroom deserve the opportunity to learn, practice, and extend the skills promoted by ELM and recommended by NAEYC.

Some classrooms begin the morning with a gathering time to welcome children with a song and to talk about the day. Classroom leaders are urged to not combine a gathering time with one of the 15-minute sessions. One option in some programs is to offer a brief gathering time prior to breakfast.

Each of the curriculum's activity plans suggests a center activity related to the topic being explored in a group session. The suggested center activity can be offered when other centers (sand/water, dramatic play, etc.) are available.

In planning a daily schedule, it is valuable to remember that children function best in settings that use a similar, predictable schedule and environment for the day. Research indicates that positive classroom management and routines—including consistent expectations for behavior and clear routines—are linked to increases in children's inhibitory control.[3] Research on family child care homes shows that planned activities and routines plus positive caregiver attention to children are associated with children's positive behavior.[4]

ELM contributes to the maintenance of a predictable classroom day with large/group activity plans that signal a clear end and with content that helps children understand routines and regulate their behaviors.

Planning Form

ELM provides a one-page planning form for a week that is entitled *ELM Planning Form: Week of* _____. A printable version of the form is located in the collection of preschool forms. A sample of a completed form is located in the Appendix of this *Guide.* Week 8 activity plans are the focus of the sample form.

The planning form provides space for noting area-specific Adaptations of ELM Activity Plans. There are columns for listing adaptations of large/

small group activities and related center activities. The form also includes a space for noting Tailored Learning Supports for individual children.

The process for determining activity plan adaptations for all children is described in the Adaptations section of How to Use Activity Plans. Procedures for determining tailored learning supports for individuals or small groups of children are described in the Individualizing Children's Learning Experiences section of this *Guide*.

Classrooms often provide centers that are not part of a week's ELM activity plans. There is space on the *ELM Planning Form* for recording plans for these centers (see Other Centers). There also are spaces for noting plans for Outdoor Experiences and Connections with Families which may or may not be directly related to ELM activities.

Lastly, the *ELM Planning Form* offers a section for noting reflections on the week. Especially helpful are "next time" comments that can be considered in future uses of an activity. The reflections section may pertain to activities offered in the prior week or to the week in which the plans on the form are implemented. The reflections in the Appendix sample of the form represent the prior week.

Completed copies of the *ELM Planning Form: Week of* ____ should not be posted in a classroom because they contain confidential information about individual children.

Transitions

A typical day in an early childhood classroom involves many transitions, including transitions to and from the four separate ELM learning activities offered daily. The NAEYC accreditation criteria call for classroom staff to plan for and support children's transitions in addition to providing a predictable daily schedule.[5] The following are some suggestions for successfully facilitating children's transitions from one activity to another.

- Staff teamwork can contribute to smooth transitions for children. Determine staff roles and responsibilities in advance of transitions, including decisions about where staff members will be located in the room and who will monitor and help children who may need extra assistance with a transition.[6]
- In addition to consistently providing a five-minute signal that center time or another play period is coming to an end, provide an individualized signal to children who may struggle with a transition and miss hearing the "it's almost time to . . ." message to all children.
- Make sure that all materials for the next activity are ready and waiting.
- Use part of a favorite activity in a transition. Example: The *Sleeping, Sleeping, All the Children Are Sleeping* game (Self-Regulation Week 12, Day 1) could end with guidance on what children are to do next.
- Engage children in practicing and talking about a transition. Demonstrate how transitions work for children who join the classroom.[7]
- If a transition must include a waiting period, such as waiting to go outside, remind children of options for waiting patiently. See Self-Regulation Week 6, Day 1.
- Remember that not everyone needs to move to the next activity at the same time. Placing staff members in strategic locations in the room can enable children to leave center time or free play time individually or in small groups.
- Invite a child who manages transitions well to serve as a "transition mentor" to a child who finds transitions to be challenging.
- Consider inviting an experienced staff member from another classroom to observe a transition in your classroom and provide suggestions on how the process might be improved. It is difficult for staff in a room to see all that is going on and an extra set of eyes may be informative.[8]

The Virtual Lab School (VLS) offers information on transitions in the course on Preschool Learning Environments[9] (Lesson 5: The Environment: Schedules and Routines) and in the course on Preschool Positive Guidance (Lesson 3: Promoting Guidance).[10]

How to Use Activity Plans

Organization

ELM's activity plans for classrooms serving children 3–5 years of age are organized by days within a week. The first page of each week's set of activity plans—called *What Children Will Learn This Week*—provides a brief summary of content emphasized during the week. A slightly modified version of this one-page document is also available for posting in a classroom (see Connecting with Families section of this *Guide*).

Day numbers are used on the activity plans to provide some flexibility in when plans are used. A special classroom event on Day 3, for example, might prompt an ELM Day 3 activity plan to be used on Day 4 or combined with the Day 4 activity plan.

ELM provides 50 weeks of 20 preschool-level activity plans per week (a total of 1000 activity plans). The content is developmentally sequenced, as described earlier in this *Guide.* Plans are also sequenced with regard to introducing, reviewing, and extending foundation skills promoted by ELM. Planned activities gradually increase in level of challenge and complexity. For example, language/literacy activity plans focused on phonological awareness begin by inviting children to identify (1) single sounds, (2) several sounds, and (3) a sequence of sounds (see Weeks 1–3 in the *Sequence of Skills and Learning Goals* chart in this *Guide*).

Effective use of ELM requires implementing activity plans in the sequence they are offered. New and more advanced skills build on simpler skills, as explained earlier in this *Guide.* The progression of ELM's activity plans is intentional and developmentally sound.

The content sequence assumes the first week of ELM use occurs when older children leave a mixed-age classroom for kindergarten and other children (often younger) enter a room. There is not a fixed start date for ELM use, however.

Some special topics are explored during weeks that typically would occur during summer months. The topics include moving from one home or community to another, transportation, dinosaurs, and how authors create books. The special topics are described briefly in this *Guide* in their respective areas.

Benchmarks for Using ELM Activity Plans

1. Activity plans are used in the sequence in which they are offered in the ELM curriculum.
2. Materials needed for an activity are secured in advance of implementing the activity. Space is arranged in advance of implementing the activity.
3. Adaptations of activity plans are made before and/or during use of an activity for the purpose of engaging children in challenging and achievable learning related to the activity goal.
4. Staff members use their own words and style to implement a planned activity.
5. Implementation of an ELM activity plan maintains the goal and content of the plan.
6. Staff members look at, listen to, and appropriately respond to children to support their active participation in an activity.

Components

The format and components of ELM activity plans are designed to facilitate ease of use. The left side of the first page of each plan offers the following **basic information about an activity**: the area and foundation skill(s) promoted by the activity; the activity's learning goal; the recommended configuration (large and/or small group); key concepts introduced or reviewed in the activity; materials needed; whether the activity promotes another content area; and often an optional book that can be shared at a different time during the day to extend children's understanding of the topic.

Each activity plan offers a model of high-quality implementation of the **large/small group activity**. There are suggested phrases to use for engaging children in an activity and child-friendly definitions of unfamiliar (novel) words and concepts.

Each large/small group activity is organized by action words such as Begin, Explain, Ask, Act. The actions are connected to developmentally appropriate teaching practices discussed in the Introduction to the ELM Curriculum section of this *Guide*.

ELM's large/small group activities end with a Recap that helps children review the activity. The Recap also signals the end of the activity, which is an important element of a predictable schedule that can help children regulate their behaviors.

The model of high-quality implementation is not intended to be used as a script that is read aloud or memorized. Consider the model as the talk captions of a video without the images. Staff who participated in the ELM pilot phase often prepared note cards with key points they wanted to remember when using an activity plan.

In an effective learning activity, staff use their own words and remain fully connected to children through eye contact and responsiveness to their participation and comments. ELM activity plans are to be used flexibly while maintaining a clear focus on the activity's learning goal.

Each activity plan offers **scaffolding tips** intended to help staff engage in the developmentally appropriate practice of offering challenging and achievable experiences for children. There are two types of scaffolding tips. Extra support strategies offer children additional help, often by focusing on specific parts of an activity. Enrichment tips offer ideas for adding challenge to an activity.

Decisions about scaffolding tips often occur during the here-and-now use of an activity. Children may seem unclear about an idea or action introduced early in an activity, for example, and an extra support tip may offer an appropriate staff response. Scaffolding tips also may inform decisions about how to adapt an activity plan prior to offering the activity, as discussed below.

Activity plans include a suggested **center activity** that seeks to extend the focus of the activity plan to children's play experiences. The center activity may be offered when other centers are available to children. Each activity plan also offers a suggestion for using the activity in a **family child care** setting. Many of the suggestions build on the multi-age character of family child care homes.

Adaptations

In the ELM curriculum, classroom staff serve as experts in adapting ELM's activity plans. There is a range of abilities and interests among children in any classroom, particularly in mixed-age classrooms. Classroom staff members are in excellent positions to determine how to adjust ELM activities to support meaningful learning among children in their classroom. The role of classroom staff as experts in adapting planned learning activities is described in Introduction to the ELM Curriculum section of this *Guide*.

Classroom staff decide whether a planned activity needs to be adapted while using the activity.

By watching children's reactions and listening carefully to their comments and questions, a responsive staff member quickly knows whether an important element of activity information needs to be rephrased, repeated, broken into smaller parts, or expanded into a more challenging opportunity for children to learn. The scaffolding tips described above are one way ELM seeks to support adaptations of learning activities.

Classroom staff also may make adaptation decisions before an activity is offered. An adaptation often applies to the content of all activity plans offered for a week in a given area (example: compound words in language/literacy). An adaptation of an ELM activity also might pertain to support for the participation of specific children in an activity.

During the week represented in the *ELM Planning Form* sample included in the Appendix, the language/literacy activity plans promote children's understanding of compound words. The staff member who prepared the sample form anticipates children would benefit from her pointing to and saying each component word twice (example: cup, cake; cup, cake) during the large/small group activity. The staff member listed specific picture cards (cupcake, raincoat, etc.) she anticipates would be helpful to children during the center activity. For the math large/small group activities, the staff member intends to use small numeral cards to help children during the week's activity focus on counting small groups, forming equal groups, and one-to-one counting.

How do classroom staff determine appropriate adaptations of activity plans? Three major sources of information are described below.

- Reflect on children's responses to prior related activities. For example, the staff member who prepared the adaptations listed on the sample *Elm Planning Form* in the Appendix may have noticed puzzled looks on children's faces when he/she said only once the two words that make up a compound word. Saying the component words twice is a good attempt to strengthen children's opportunities to be successful in identifying compound words.
- Draw on classroom staff understandings of children's abilities or interests. There are examples of this practice in the adaptations section of the sample *ELM Planning Form* in the Appendix. Staff members' understandings of children's interests led to a plan to begin a social studies activity with an invitation for children to talk again about their grandparents. Staff members' informal understandings of children's color knowledge led to a plan to review purple and orange prior to playing a circle game that assumes children are familiar with purple and orange.
- Review the scaffolding tips offered in pertinent activity plans. Determine whether your use of one or more of the tips might help children in your classroom benefit from the learning activities of interest. In the *ELM Planning Form* sample in the Appendix, the adaptation for Social-Emotional activity plans reflects a scaffolding tip in the Week 8, Day 2 Social-Emotional activity plan, and the adaptation for Physical/Health activity plans is informed by a scaffolding tip in the Week 8, Day 4 Physical/Health activity plan.

Some activities may not need adaptations during the planning stage. In the sample *ELM Planning Form* in the Appendix, adaptations were not identified in advance of offering four of the ELM center activities. However, adaptations may have been made during the activity.

Guidelines

1. Be familiar with the "big picture" and the details of the activity plan.
    - Identify the foundation skill promoted by the plan and review information on the pertinent area to bolster your understanding of how the foundation skill is important to children's growth and development.

- Look at how the activity plan connects to ELM's sequence of attention to a foundation skill. Move backward and forward with several weeks of activity plans in the pertinent area to remind yourself of where the curriculum has been and where the curriculum is going to reinforce and further develop a specific foundation skill.
- If the plan's left-side box indicates the activity also promotes another area, look closely at the plan to understand how it may help children develop skills in an additional area.
- Decide whether the activity plan offers a professional development opportunity for you to strengthen a particular skill in teaching and nurturing young children.
- Read the model of high-quality use of the plan, including scaffolding tips, and consider making notes of aspects you want to be certain to use.
- Read any book that is central to the activity several times. Sing any song that is part of an activity several times. If you are not familiar with the song, search for an online source or ask a coworker familiar with the song to teach it to you.
- We discourage use of recorded music (such as a compact disc) when an activity plan calls for staff to sing. You can vary the pace of a song in response to children's participation and emphasize key words or phrases. A singer's voice is often overpowered by the sounds of an accompanying instrument(s) in a recorded song. Children tend to participate more fully in response to live music, such as your voice.

2. Determine your basic approach to using the activity plan.
   - Decide whether an activity's suggested configuration is likely to work with children in your room. An activity plan suggested for large group might be better implemented with a small group.
   - Identify natural stopping points in the activity, including a book sharing, that you can implement if time runs short. Determine when during the current day you can return to the activity or book, if appropriate. Take note of parts of an activity plan that offer additional experiences (typically with the phrase: "if child interest and time permit").
   - Determine if/when an optional book suggested in an activity plan might be shared and whether any parts of an optional book are especially important to emphasize.
   - Secure all materials needed for the session, including the suggested center activity. Use substitute materials, if necessary.
   - Arrange space for optimal use of the plan.
3. Determine ways to adapt the activity plan.
   - Anticipate how children in your room may react to the activity. Consider making adaptations that will improve children's opportunities to learn from the activity. See the previous section on Adaptations.
   - Ensure that adaptations of the activity plan directly support the activity's goal and do not encourage drift from the goal or confusion for children.
   - If the activity involves physical movement, such as children forming pairs or moving around the classroom, determine how best to efficiently facilitate movement. Many activity plans offer suggestions (sometimes in scaffolding tips) that you may wish to adapt.
   - Determine whether additional pictures or props might be helpful to include.
   - If the activity involves a book, determine responsive ways to share the book with children in your classroom. Examples:
     - how to use your own words to describe book illustrations, including actions,

objects, and characters shown in an illustration

- ways to use your voice inflections and facial expressions to communicate interest in the book and a child(ren)'s responses
- ways to meaningfully involve a child(ren) in the book sharing
- sentences or passages that may need elaboration or paraphrasing
- novel words to define

- Help children connect the topic of the activity plan to a recent or forthcoming event in your classroom, center, or community or to children's particular interests.
- Plan how to transition children into the activity and from the activity to the next activity, keeping in mind that segments of some activities may be incorporated into a transition. See the previous section on Transitions.
- During the activity, listen carefully to children's comments and responses for opportunities to build on children's current understandings and interests.

4. Reinforce and extend the activity plan.
   - Seize upon naturally occurring opportunities and transitions during the rest of the day or on following days to support children's understanding of the concepts or words introduced during the activity. Talk spontaneously with individual or several children about some aspect of the activity.
   - Make adjustments in the suggested center activity based on (a) children's participation in the activity, and (b) your classroom staff's availability to engage with children during part or all of the center activity.
   - Provide and draw attention to books, props, and/or other materials related to children's specific interests in the topic of the activity plan.
   - Highlight parenting tips in this week's *Readiness Starts Early* resource that are especially important for specific families to consider.
   - Identify and plan additional ways to help a child or small group of children develop the foundation skill by considering the follow-up learning suggestions offered in the pertinent *Guide for Observing and Individualizing*. Also explore suggestions of additional ways to promote the foundation skill described in the *User Guide*. See the Building on the Activity Plans section in descriptions of each area promoted by ELM.
   - Record reflections on the activity and follow-up suggestions in your planning form for the week.

Attendance Considerations

Periodically there are weeks of lower attendance and/or partial weeks during the 52-week period that many early childhood programs operate. Also, toward the end of the day in some programs there is a pattern of combining into one room children from two or more classrooms when enrollment drops due to children leaving for the day. While these situations are not good times to introduce new skills, they offer opportunities to reinforce and extend skills emphasized in previously-used ELM activity plans. Below are suggestions of how to maximize the potential of ELM activity plans to promote meaningful learning among children who participate in programs during low-attendance periods.

Children often want to repeat or continue an activity for which there is limited time during a typical day. Ask children to identify their favorite activities during the previous week (or earlier in the same week). Use their responses to select activity plans that can be implemented again, perhaps with

use of a scaffolding tip that enriches the activity. In a combined classroom, children may wish to repeat or continue an activity offered earlier in the day. Many counting activity plans in mathematics can be repeated with different materials, for example.

In repeated activities, invite a volunteer child(ren) to facilitate parts of the activity. For example, a child may like to show other children how to match component cards in the center activity focused on compound words in Language/Literacy Week 8, Day 2.

Consider reading one or more of the books suggested in the Optional Reading section of activity plans implemented recently. The books offer an efficient way to deepen children's understanding of topics of keen interest.

Revisit some of the charts made as part of ELM activities. With time, children may have thought of or learned additional information or ideas to add to a chart. For example, children may like to add information to the chart of things to do at home or somewhere else (Social Studies Week 6, Day 4).

Each of the descriptions of the eight areas promoted in ELM include a section entitled Building on Activity Plans. Within this section is information on more practices for promoting the area's foundation skills. Review these practices as part of planning activities for low-attendance periods. Low-attendance periods often are good times for one-to-one work with children. Approaches to tailoring children's learning experiences are described in the next section of this *Guide*.

Children Who Participate for More than a Year

Children who enter a mixed-age preschool-age classroom at the age of three years are likely to continue in the classroom for one or maybe two more years. ELM provides sequenced activities for one year. Will children become bored in the classroom after one year of participation in ELM activities? The short answer is "no."

The longer response to this question is that younger children have qualitatively different experiences than older children in a mixed-age classroom. Younger children's experiences are shaped in part by watching and interacting with slightly more advanced peers. Children connect with curriculum content and play experiences at a level that is appropriate for their cognitive and social skills. Younger children are often the intended recipients of the extra support scaffolding tips offered in ELM activity plans and guidance on involving younger children in more complex activities. In the language/literacy activities, for example, there are suggestions on how to help all children interpret what happens in a book (see Areas Promoted by ELM section on language/literacy). Younger children are more likely to participate in the review of larger units of sound than in content on smaller units of sound beginning in Week 24. In a second year of ELM, children may be ready for activities focused on smaller units of sound.

A second year in a classroom based on ELM will be a much different experience than the first year. Children in a second year are likely to get more out of learning activities due to more mature cognitive and social skills plus their familiarity with basic content. They are likely recipients of an activity plan's scaffolding tips focused on enrichment and "more practices to support" suggestions found in the descriptions of each area promoted by ELM (see Areas Promoted by ELM section). Children in a second year are now the advanced peers for younger children and potential informal leaders of a classroom's community.

The above response to the "will children become bored" question assumes classroom staff intentionally and consistently accommodate a full range of children's abilities and interests. ELM's activity plans and other resources support this approach. Mixed-age classrooms fall short of their mission when they are geared primarily to one of the ages represented in the classroom.

Quality of Implementation

The success of any curriculum depends in part on the quality of its implementation.[11] Activity plans and other written resources require careful and thoughtful use. Using an ELM activity plan to its full potential requires attention to the plan's details from the perspective of children.

For example, ELM activities often include both close-ended and open-ended questions. Both types of questions are beneficial to children's learning, especially when they are paired in a sequence[12] as illustrated in the Introduction to the ELM Curriculum section (see Example of Intentionality in Developmentally Appropriate Teaching).

A question only works when it is followed by a pause of sufficient length that invites a response and signals to children that the question is authentic. It is not a directive in disguise. Questions are teaching tools. A teacher who asks and then quickly answers his/her own question misses a valuable opportunity to engage learners in thinking about the topic at hand.

Attending to the implementation details of a curriculum requires a strong support system. A teacher may quickly answer his/her own question (or skip the question) when distracted by other issues in a classroom or center. A curriculum is not implemented in a vacuum. Other dimensions of a classroom's quality impact the effectiveness of any curriculum.

ELM directly addresses five of 10 NAEYC program standards (relationships, curriculum, teaching, assessment of child progress, families). The remaining five standards are equally important (health; staff competencies, preparation, and support; community relationships; physical environment; leadership and management). They directly and indirectly contribute to children's daily experiences, including the quality of learning activities included in a curriculum. ELM can flourish when these standards are solidly in place.

For example, a classroom's physical arrangement sets the stage for children's social and cognitive engagements with materials, peers, and adults. The physical arrangement also facilitates efficient routines and transitions that maximize learning time.[13] Research suggests that the spatial layout of a classroom,[14] and the placement and contents of learning centers,[15] are important contributors to the quality of children's learning, including play.

Positive and supportive relationships between staff and children are another example of how a classroom's quality impacts use of a curriculum. Research with preschool-age children shows that higher levels of positive staff-child interaction and classroom emotional support are linked to children's social competence,[16] and to declines in children's cortisol and alpha-amylase levels, two major indicators of activity in the stress response system.[17]

Individualizing Children's Learning Experiences

The idea of "meeting children where they are" is central to excellence in early care and education. This perspective is clearly articulated in the NAEYC position statement on developmentally appropriate practice. The statement reminds us that learning and development are optimally promoted when new experiences build on what a child already knows and is able to do, and when learning experiences promote an achievable stretch for developing a new skill.[18] An achievable stretch for one child may be a frustrating and confusing experience for another child.

Responsiveness to differences among children occurs at two levels in ELM. One level is the adaptation of large/small group learning activities. Ways to adapt ELM activities before and during the use of a large/small group activity are described in

the How to Use Activity Plans section of this *Guide*. A second level of responsiveness happens with individual children primarily in one-to-one and small group arrangements.

The process of individualizing children's learning experiences begins with information about a child secured through developmentally appropriate assessments and focused observations. Thoughtful review of this information by classroom staff leads to the development of follow-up learning plans that are implemented individually or in small groups of children. A child's experiences with a follow-up plan inform the development of future plans.

ELM offers tools for conducting focused observations and assessments of children's progress in acquiring foundation skills promoted by the curriculum. Observations are well suited for securing information on skills that are exhibited spontaneously. Examples include relationship skills and self-control of behaviors. Assessments are an efficient way to learn about skills that would be difficult to observe in spontaneous play. Examples are number knowledge and letter knowledge.

The NAEYC position statement on developmentally appropriate practice emphasizes the value of assessing children's development and learning for the purposes of planning, implementing, and evaluating the effectiveness of classroom experiences.[19] Assessment of child progress is the fourth standard in the NAEYC accreditation criteria. Early childhood programs are expected to conduct ongoing formal and informal assessments that help staff provide appropriately challenging activities and tailored learning experiences.[20]

Assessments

ELM offers assessments of children's progress in developing literacy and math skills that research indicates are strong predictors of longer-term positive outcomes, including school readiness. The skills are to be assessed after children have been introduced to and had multiple opportunities to practice the skill through ELM activity plans. See the *Sequence of Skills and Learning Goals* chart in this Guide.

Assessments are available for six literacy skills: compound words (Week 11); syllables (Week 16); initial sounds of familiar words (Week 23); blending the sounds of one-syllable words (body-coda and onset-rime in Week 30); and letter knowledge (Week 43).

The blending sounds assessment (Week 30) is designed for children who are ready to learn this advanced skill and have productively participated in activities focused on blending sounds offered in Weeks 24–30. This assessment should not be used with children who struggle with blending sounds.

Three math assessments are offered, each focused on counting skills: one-to-one counting and understanding the last number counted indicates how many (Week 13); recognizing and naming

ELM Benchmarks for Individualizing Children's Learning Experiences

1. Focused observations and/or assessments are conducted approximately every four weeks for each child.
2. A child's follow-up learning plan directly pertains to the content focus of observations or assessment.
3. Follow-up learning plans provide precise information on how a child is to be supported.
4. Children's follow-up learning plans are implemented as intended in small groupings of children or one-to-one settings.
5. A child's follow-up plan is phased out, extended, or revised in response to a child's progress.

numerals (Week 22); and understanding the concept of "one more" (Week 27).

The assessments are brief and supportive of a child's active participation. Each assessment begins with a practice or demonstration of a familiar task (example: count out two circles). Most assessments are one-to-one, conducted at a table in an area of the room with few or no distractions. Two of the literacy assessments are done in small groups of children. We suggest assessing 4–5 children each day of an assessment week. Procedures for each assessment are located in the set of activity plans for the week in which an assessment is scheduled.

Children generally enjoy and look forward to the attention of a staff member in a one-to-one assessment. There may be instances where a child seems uncomfortable participating in an individual assessment. If this occurs, promptly and supportively bring the session to a close. You may wish to try an individualized assessment again soon, especially if situational factors seemed to influence the child's reaction to the assessment. Alternatively, observation procedures are available in ELM for securing information on all but one of the math and literacy skills that are the focus of assessments (there is not an observation procedure for letter knowledge). See the next section on Observations.

Evaluation of a child's assessment performance leads to one of three designations: Got It, Getting It, or Not Yet. Straightforward criteria for determining a designation are set forth in each assessment procedure. ELM provides printable forms for recording each child's assessment performance. The recording forms are located in the collection of preschool forms.

Each assessment procedure offers two types of follow-up learning supports: strategies that reinforce a child's emerging understanding of the skill and strategies that reintroduce the skill. The reinforce activities are designed for children with a Got It or Getting It designation. The reintroduce activities are for children who do not demonstrate the skill (Not Yet). Staff members are to decide which strategy or strategies are appropriate for a child based on the assessment results and other informal knowledge of the child's skill understanding. The follow-up plans may be implemented with small groups of children or in a one-to-one setting. We suggest reassessing children who received a Not Yet designation after they have been reintroduced to activities focused on the skill.

Each assessment plan provides examples of descriptive entries for a child's portfolio based on the child's performance. The portfolio examples briefly describe assessment results and follow-up support.

In the language/literacy area, results of the Week 23 assessment of a child's skill in identifying initial sounds of familiar words offer an important decision point. In general, children who find it especially challenging to identify initial sounds (a Not Yet assessment designation) may not be ready to engage in the sound blending activities that begin in Week 24. The Week 23 assessment plan describes ways to support and move forward with children with a Not Yet designation.

Observations

ELM offers guidance for conducting focused observations of a child's progress in acquiring foundation skills promoted by ELM. The guidance is described in a *Guide for Observing and Individualizing*. There are 24 guides, each specific to a foundation skill promoted by ELM.[21] In the Appendix is a sample of a guide focused on a child's ability to concentrate, a foundation skill related to self-regulation. The guides are available as printable documents in the collection of observation guides.

Each guide lists behaviors to observe. The behaviors represent dimensions of a foundation skill. Staff select a behavior to observe. For example, staff who wish to observe a child's concentration skills may focus on a child's ability to (1) concentrate on an experience, such as a puzzle activity, (2)

concentrate on self, such as using deep breathing to calm down, or (3) concentrate on others, such as listening to what someone is saying. Observation opportunities are suggested for each behavior. The opportunities generally involve different settings, including an ELM learning activity, center time, free play, cleanup, rest time, and meal and snack times where appropriate.

Experts recommend conducting more than one focused observation of a child's progress in developing a specific foundation skill.[22] A child's behaviors in one setting, or on one day, may not be an accurate indicator of a child's mastery of a skill. We suggest conducting at least two focused observations of the same skill, preferably on different days and/or in different settings (example: observe a child's skill in paying attention during an ELM activity and during free play). Additional observations may be needed if two observations do not provide a reasonably consistent pattern of information about a child's progress in developing the skill of interest.

The observations are to be recorded on a form or card provided by your center or organization. Succinct entries are appropriate. There are examples of observation entries in the sample *Guide for Observing and Individualizing* in the Appendix.

The observations are to be reviewed by classroom staff for purposes of determining a follow-up plan that supports continued development of the observed skill. Each child's follow-up plan is to be recorded on the child's *ELM Snapshot of Child Progress: 3–5 Years* form. This form is described below in the section on Implementing Follow-Up Plans.

Each *Guide for Observing and Individualizing* suggests some options for follow-up support. Similar to the assessment procedures, the follow-up suggestions offer ways to reinforce an emerging skill and ways to reintroduce activities that support development of the target skill. See examples in the *Guide for Observing and Individualizing* in the Appendix. One guide in each of the eight areas promoted by ELM offers examples of portfolio entries that vary by child skill level.

The observation guides for language/literacy and math skills include attention to skills for which ELM provides assessments. With the exception of

Examples of Using Observations to Develop Follow-up Learning Plans

There are examples of observations and follow-up plans for two children—Quentin and Sarah—in the Appendix sample of a *Guide for Observing and Individualizing.*

In the Appendix examples, note that a classroom staff member prepared a short summary of two observations of Quentin's concentration skill and wrote a simple follow-up plan designed to reinforce his ability to concentrate. The observations suggest that Quentin has strengths in concentration. For example, in one observation he ignored a potential distraction from his clean-up activities when another child ran by laughing. The follow-up plan builds on Quentin's interest in problem-solving games and fine motor activities by encouraging him to engage in slightly more challenging activities that involve concentration and to talk about his thoughts and actions during the activities.

The observations of and follow-up plan for Sarah in the Appendix examples focus on her concentration skills in preparing for a rest. The observation entries indicate that Sarah has a consistent rest preparation routine that includes deep breathing introduced in ELM self-regulation activities. It appears that deep breathing could work better in her attempts to calm down for rest time. The follow-up plan developed by a classroom staff member focuses on helping Sarah improve the way she does deep breathing at rest time.

letter knowledge (assessed in Week 43), there are opportunities to systematically observe a child's progress in developing phonological awareness and counting skills with the aid of a *Guide for Observing and Individualizing*. Use of these observations is at the discretion of classroom staff. The availability of both assessment and observation tools for these language/literacy and math skills enables classroom staff to consider information from different sources for determining follow-up supports. Also, observation may be a better option for securing skill development information for children who find it difficult to participate in an individualized assessment, as described earlier in the Assessment section.

Frequency

We recommend conducting an assessment and/or focused observation with each child every four weeks. In a preschool classroom of 24 children, for example, six children would be assessed and/or systematically observed each week. Flexible adherence to an every-fourth-week pattern of observing or assessing is necessary because assessments of various skills need to occur in the weeks specified in the activity plans.

Classroom staff may have insufficient time to conduct focused observations of individual children during a week in which individualized assessments are conducted. However, focused observations may be done during the weeks of the first two literacy assessments (Weeks 11 and 16) because these assessments occur in small groups.

What Skills Should Be Observed?

Classroom staff need to make decisions about specific skills to systematically observe for each child. We suggest these priorities:

1. Observe skills that are strongly linked to school readiness and later positive outcomes, the goal of ELM. These include (but are not limited to) self-regulation skills in self-control, executive function, and concentration; social-emotional skills in emotion knowledge and peer relationships; and physical development skills related to motor development. Language/literacy and math skills, which are especially strong predictors of later school success, are the focus of various assessments described above. Supplementing the assessments with observations of these skills is optional, as described earlier.
2. Observe skills for which you or family members have particular interest or concern regarding the child. A child may have difficulty sharing and taking turns, for example. Focused observations of these skills can provide insights into appropriate supports in this area. Skills of interest or concern to you and/or family members might pertain to one or more of the skills suggested as a first priority for observation.
3. Observe skills directly related to a child's interests. For example, topics related to science or creative expression might be of keen interest to a child. Focused observations of pertinent skills can help staff develop targeted opportunities for a child to deepen or expand special interests.

Observations of a specific skill should occur after a child has been introduced to the skill and had multiple opportunities to practice or use the skill. The *ELM Snapshot of Child Progress: 3–5 Years* form indicates the week in which ELM activities begin giving attention to each foundation skill. See also the *Sequence of Skills and Learning Goals* chart in this *Guide*.

Implementing Follow-up Plans

Follow-up plans may be implemented in a one-to-one arrangement and/or with a small grouping of children who would benefit from the same type of follow-up support. Each configuration is described below.

Focused observations typically result in a one-to-one follow-up plan. For example, an observation of a child's understanding of basic shapes may indicate that the child has difficulty identifying shapes in an environment other than a planned activity in which specific shapes are presented by a staff member. The follow-up plan is to encourage the child to look for and say the names of shapes in the classroom or outside, and to use a set of shape cutouts as supports for finding basic shapes as needed. Other children may see the child engaged in this activity and want to join the process. In this situation, the follow-up plan involves a small grouping of children. The involvement of peers may be helpful to all involved, including the target child. It's important that the child for whom the follow-up plan was originally developed remain centrally involved in the hunt for shapes.

Assessments may result in follow-up plans that can be implemented in one-to-one or small group arrangements. Similar to the situation described above, a follow-up plan designed for a specific child may attract the interest of other children. A plan intended for one-to-one implementation may evolve into a small group activity.

A more common pattern is that assessment results identify a set of children who need the same type of follow-up support. An assessment of children's understanding that the last number counted tells the number of items in a collection of the items (assessed in Week 13), for example, may identify six children who need to be introduced to this skill. It would be efficient to provide this follow-up support to a small grouping of the targeted children.

It is important for follow-up plans to be precisely written so classroom staff can implement a plan with a child who was observed or assessed by a different staff member. It is also important for a plan to specify the intended frequency of using a follow-up plan.

Child responses to a follow-up plan should be consistently monitored. Sometimes it is appropriate to continue provision of follow-up support beyond the week it is initially offered. If a child readily demonstrates solid progress in developing the targeted skill, consider taking a one-day break from the plan to see if the skill continues to move in the desired direction. Phase out use of the follow-up plan if the child continues to show positive development of the skill of interest. Another option is to revise the follow-up plan. It may be beneficial to adjust a plan by slightly increasing its challenge.

If a child shows no or limited progress with a targeted skill, one or more of the following options may be pursued:

- Consider revising the follow-up plan. Is it sufficiently focused or might attention to a different component of the skill be more productive to pursue?
- Consider whether a related, simpler skill may be more appropriate to promote. For example, a child who is struggling with syllable identification may benefit from a review of components of compound words.
- Gather more information through additional observation and/or assessment. If the skill is a focus of one of the assessments, learn more by also conducting observations of the skill with the pertinent *Guide for Observing and Individualizing*.
- Involve classroom staff who are familiar with the child in decisions about follow-up plans. Tapping multiple perspectives on child's skills can be informative.

- Secure the expertise of a specialist. Developmental issues may be involved in a child's progress. Challenges in identifying rhyming words may signal a hearing limitation, for example.

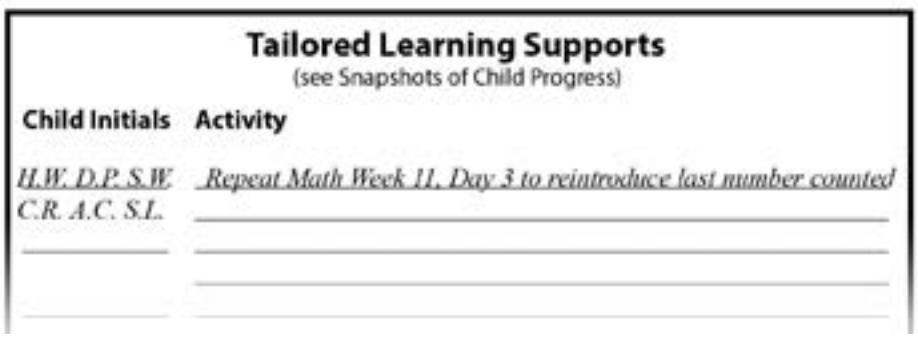
A follow-up plan is entered on two forms: the child's *ELM Snapshot of Child Progress: 3–5 Years* and the classroom's *ELM Planning Form* for a week (in the Tailored Learning Supports section). The two forms serve different purposes.

The *ELM Snapshot of Child Progress: 3–5 Years* form is a summary of assessments and observations conducted on a specific child during a year or a period of time determined by classroom staff. The *Snapshot* form provides classroom staff with an efficient reminder of individualized work with a child. The form is appropriate for sharing with families during conferences and other confidential exchanges (see Connecting with Families section). Additional copies of the form will be needed for recording results of reassessments and/or observations of a skill that was previously observed.

Entering follow-up supports for specific children on the *ELM Planning Form* moves the individualized work to an implementation plan. The form provides spaces for individualized work with up to eight children for a given week. Most likely a follow-up plan will be entered on the *ELM Planning Form* about a week after the assessments or observations were conducted, depending on the timeline for leadership review of a classroom's plans for a week. As noted above, it may be appropriate to continue one or more child's follow-up supports for an additional week or longer. The form provides more spaces (eight) than number of children to be assessed or observed during a week (six) to accommodate this possibility.

The samples of the *ELM Snapshot of Child Progress: 3–5 Years* form and *ELM Planning Form* for a week, located in the Appendix, show follow-up plans for Quentin (also represented as Q.T.), whose observed concentration skill is the basis of sample observations and follow-up plan in the *Guide for Observing and Individualizing* form in the Appendix. Note the *Snapshot* form entry of the follow-up plan to support development of Quentin's concentration skill (self-regulation), based on observations conducted October 2 and 3, is also an entry on the *ELM Planning Form*.

Below is example of an entry for the *ELM Planning Form* (Tailored Learning Supports section) regarding use of a follow-up plan with a small group of children (listed with initials) who did not show an understanding of the last number counted in the Week 11 assessment of this skill.



Tailored Learning Supports
(see Snapshots of Child Progress)

Child Initials	Activity
H.W. D.P. S.W. C.R. A.C. S.L.	*Repeat Math Week 11, Day 3 to reintroduce last number counted*

Connecting with Families

ELM offers four curriculum-based resources to help classroom staff develop and maintain reciprocal relationships with families. The resources include family learning activity suggestions, weekly summaries of the classroom's learning focus, examples of written portfolio descriptions of a child's progress, and a summary of a child's observed and assessed progress. In addition, some ELM activity plans include opportunities for parents/caregivers to contribute to children's classroom experiences. In Week 9, for example, Social Studies activity plans are based on families sharing information about their traditions and cultures.

ELM fully embraces the NAEYC developmentally appropriate practice position statement regarding the value of classroom staff and families sharing with each other their knowledge of the child and understandings of child development and learning.[23] The resources also reflect the NAEYC accreditation standard that calls for programs to establish and maintain collaborative relationships with each child's family to foster children's development in all settings (standard 7).[24]

The Virtual Laboratory School (VLS) preschool course on Family Engagement offers information on family contributions to children's development (Lesson 1), honoring diversity among families (Lesson 1), ways to promote family participation in a classroom (Lesson 2), information to gather from and share with families (Lesson 3), families of children with special needs (Lesson 4), and risks and protective factors in families (Lesson 5).[25]

Readiness Starts Early

ELM provides a weekly set of brief parenting tips in a handout known as *Readiness Starts Early*. The tips correspond to ELM activity plans scheduled for the same week. The intent is to provide families with an opportunity to reinforce and extend children's current learning experiences in the classroom. For example, a suggested family activity in Week 1 involves parent/caregiver and child looking together into a large mirror and talking about physical characteristics that are similar and different. The activity links to a Week 1 Social Studies emphasis on understanding that each person is unique.

The one-page document may be sent to and easily viewed on smart phones. Hard copies of the document also may be prepared and distributed to families. There is space for a staff member to add a personalized or general note to a hard copy.

Parent/caregivers are likely to be selective in what activities they pursue with their child based on the child's interests and/or parent goals for their child. Some families may ignore the resource or look at it infrequently. In general, however, recent research conducted with large, nationally representative samples indicates that parents of preschool-age children are more engaged in learning activities with their children than parents a decade ago.[26]

What Children Will Learn this Week

ELM provides a brief summary of foundation skills and activities emphasized each week in the curriculum. The summary is a one-page document intended for posting in a classroom. The title of the summary—*What Children Will Learn this Week*—conveys an outcomes focus related to school readiness and life skills. The summary may trigger parent/caregiver questions that hopefully lead to curriculum-based discussions about a child's learning in both family and classroom settings.

Tools for Communicating about Child-Specific Progress

As noted earlier, there are **examples of portfolio entries** for sharing specific information about a child's progress in each of the eight areas promoted by ELM. The examples are offered in each of the language/literacy and math assessment procedures and in eight versions of the *Guide for Observing*

and Individualizing.[27] These resources are described in the Assessment and Observation sections of Individualizing Children's Learning Experiences in this *User Guide*. Also, many ELM activity plans lead to work that may be used as artifacts in a child's portfolio. Examples include drawings in a science journal and writing attempts in a letter journal.

In addition, the *ELM Snapshot of Child Progress: 3–5 Years* form is appropriate for sharing with families during parent-staff conferences, as described previously in this *Guide*. The form can serve as a useful springboard for conversations about specific areas of development and learning. Talking about how classroom and family can collaboratively support particular aspects of a child's growth and development is a meaningful way to act on the program-family partnership concept emphasized in NAEYC developmentally appropriate practices. Discussions guided in part by the *ELM Snapshot* form also may lead to information about parent/caregiver priorities or concerns that can be included in decisions about skills to systematically observe. See the section on Observations.

Training Resources

Basic Training Plan: Five Key Steps

1. Understand essential information in the *ELM User Guide*, including the following:
   - ELM's research-based approach to promoting school readiness and life success;
   - the importance and sequence of foundation skills promoted by ELM; and
   - how ELM reflects developmentally appropriate practice and supports NAEYC accreditation.
2. Plan your classroom's daily schedule.
   - Review the guidelines in the Planning a Daily Schedule section of this *Guide*.
   - Make adjustments in the existing daily schedule, if needed.
   - Center-level decisions about staff schedules and classroom age groupings may be needed for effective use of ELM.
3. Become familiar with components and effective use of activity plans.
   - Review all information in the How to Use Activity Plans section of this *Guide*.
   - Look closely at each component of an activity plan and carefully read or talk through several plans to see how the components work together.
   - Consider how an activity plan's goal (listed in upper left area of first page) is promoted in the plan.
   - Imagine how the plan might work with different children you know. How might you adapt the activity plan? See Adaptations section of How to Use Activity Plans.
   - Become familiar with the *ELM Planning Form: Week of* _____.
4. Understand options for tailoring children's learning experiences.
   - Review the Individualizing Children's Learning Experiences section in this Guide.
   - Become familiar with how assessments and focused observations are used to develop follow-up learning plans.
   - Consider how follow-up plans could be used with children you know.
   - Become familiar with the *Snapshot of Child Progress: 3–5 Years* form.
5. Consider ways ELM can help strengthen existing partnerships with families.
   - Identify ways to introduce ELM to families.

- Determine a dissemination plan for the weekly *Readiness Starts Early* and *What Children Will Learn This Week* resources.
- Brainstorm strategies for using the *Readiness Starts Early* resource to foster collaborations with families that support each child's learning and development.
- Determine how to incorporate staff-recorded information on planning forms (such as the *Snapshot of Child Progress*) into parent-staff conferences.

ELM Online Trainings

Six online trainings on understanding and using ELM are available. Three trainings are for trainers of direct care staff and three trainings are for direct care staff. The content of each training pertains to the full age span (birth through five years) of the ELM curriculum.

The online trainings supplement and enhance information available in the two *User Guides* for ELM: Birth–36 months and 3–5 years. The trainings offer additional examples of curriculum use and suggestions of how to strengthen understanding of ELM. The online trainings are not an alternative way to become familiar with essential information included in a *User Guide*.

The trainings for direct care staff give attention to successful use of ELM, including developmentally appropriate teaching strategies (Lesson 1); ways to make the most of activity plans, including adaptations designed to engage all children in a learning activity (Lesson 2); and approaches to effectively supporting differences in children's development and learning (Lesson 3).

The online trainings for trainers of direct care staff offer suggestions of how to introduce ELM to direct care staff by expanding on the five key steps described above (Lesson 1); ways to support classroom staff in making decisions about activity plan adaptations and tailored learning experiences for children (Lesson 2); and approaches to coaching classroom staff on effective use of ELM, including feedback on activity plan use based on an observation checklist described below (Lesson 3).

ELM Activity Observation Checklist

A checklist of items for observing classroom staff use of an ELM activity plan is available. The checklist is designed for observing an ELM large/small group activity during its typical time. The checklist also offers items for observing staff actions during a period of child-initiated activities. The checklist may be used by classroom staff for deepening their understanding of best practices in implementing an ELM activity plan.

The checklist's 16 items focus on planning and preparation, staff actions during the large/small group activity, and staff support of child-initiated activities. The form offers space for observation notes. There are four response options for each item:

- N/A: not applicable. Example: You did not observe a center time.
- No: no evidence of the checklist item during the period of your observation. Example: The staff member did not attempt to connect the content of the activity to children's experiences and/or current understandings.
- Partial: some but not all aspects of the item were observed. Example: During your observation of child-initiated activities, a staff member actively monitored children's efforts and asked questions or offered suggestions for approximately one-half of the time and talked with another staff member for the remaining period of your observation.
- Yes: the staff actions or classroom arrangements described in the item were fully present.

Prior to an observation, the trainer (observer) should (a) become familiar with the ELM activity plan that is the focus of the observation, and (b) review notes from prior observations to

identify actions that may have been targeted for improvement or strengthening. It is beneficial to monitor and provide feedback on staff progress in supporting children's learning.

We recommended using the checklist to observe staff use of a ELM activity plan at least once a month. More frequent observations may be appropriate during the early months of ELM use and/or if staff seem to have challenges in using the activity plans. We recommend observing activity plans in different areas. Example: Observe a language/literacy activity in the first month and a math activity in a second month. Staff skills in implementing activity plans may differ across content areas promoted by ELM.

Example of an Activity Observation and Coaching Session with Staff Member

The sample of a completed *ELM Activity Observation Checklist* in the Appendix reports a trainer's observation of a math activity (Week 7, Day 2) and a center time that followed the math activity.

The observation form indicates the staff member was prepared for the activity and seemed familiar with the book shared during the activity. The trainer observed considerable drift from the activity goal. Children described their breakfast food and the staff member extended this discussion with questions about healthy food. The activity's intended focus on one-to-one counting was overshadowed by attention to foods. There was a clever transition from the activity. The staff member appropriately engaged children for about one-half of the observed center time.

A coaching session was held with the classroom staff member two days after the observation. The trainer gave the staff member a completed copy of the observation form and shared highlights of what was observed, including good preparation for the activity (including the book), the transition, and staff support of children during the first segment of center time. The trainer described how the activity focused more on healthy foods than on one-to-one counting. The trainer noted that in a previous activity observation (a science topic, conducted about a month ago) the staff member kept focused on the goal and plan.

The staff member explained that healthy food is important to discuss and she is not comfortable with math. She felt okay while reading the book but was nervous talking about math after finishing the book. The staff member explained that she stayed with the science topic during the last observation because she likes science. She indicated that she understands math is important and feels bad about not doing a good job with the activity. The staff member explained that she disengaged from the last segment of center time because another staff member wanted to talk about the next day's schedule.

During the coaching session the trainer and staff member made a list of positive teaching practices the staff member is to continue. They talked about how children benefit from these practices. The trainer suggested the staff member become more familiar with math by rereading the math section of the *User Guide* and doing some of the activities suggested in Strengthening Your Understanding of Mathematics. The staff member mentioned ways she could remind herself to stay on topic. One of her ideas is to remember that topics of interest to her (such as healthy foods) are or can be introduced another time. The staff member and trainer agreed that talking with other staff about a schedule should not occur during times staff are to be interacting with children. The next time another staff member wants to interrupt classroom time for a non-essential topic, the staff member is going to ask for the discussion to happen when she is not with children.

A structured discussion with the classroom staff member(s) about the observation should occur promptly. We recommend the discussion include the following elements:

- The trainer (observer) objectively shares observation information by showing the completed form and describing observed staff actions that contributed to the selected response option (NA, No, Partial, Yes). The trainer also shares observations about staff progress in supporting children's learning by comparing actions observed in the most recent observations to staff actions previously observed.
- The staff member offers his/her perspective on the observed actions, including reasons for various actions taken or not taken.
- The trainer and staff member identify aspects of the activity plan use that can be improved or strengthened, and jointly agree on steps to take toward the desired improvement or strengthening. Example: A staff member (perhaps with the help of the trainer) offers examples of how he/she could have connected the content of the observed activity to children's experiences. The staff member (again, perhaps with the help of the trainer) describes steps to take to ensure future uses of activity plans include an effort to help children connect the activity content to recent experiences or current understandings.
- The trainer and staff member review observed staff actions that are important to continue in future uses of activity plans.
- The trainer and staff member discuss benefits of desired staff practices for children's learning and development.

Steps to improve or strengthen use of an activity plan may involve revisiting procedures and guidance offered in this *Guide* or examples offered in an online training. A staff member may benefit from reviewing information on how to adapt activity plans or facilitate transitions to a group activity, for example.

Endnotes

1 Virtual Lab School (n.d.) The environment: Schedules & routines.

2 Chien, N.C., Howes, C., Burchinal, M., Pianta, R. C., Ritchie, S., Bryant, D. M., … Barbarin, O. A. (2010). Children's classroom engagement and school readiness gains in prekindergarten. *Child Development*, *81*, 1534–1549.; See also: Early, D. M., Iruka, I. U., Ritchie, S., Barbarin, O. A., Winn, D-M. C., Crawford, G. M., …Pianta, R. C. (2010). How do pre-kindergarteners spend their time? Gender, ethnicity, and income as predictors of experiences in pre-kindergarten classrooms. *Early Childhood Research Quarterly*, *25*, 177–193.

3 Hamre, B., Hatfield, B., Pianta, R., & Jamil, F. (2014). Evidence for general and domain-specific elements of teacher-child interactions: Associations with preschool children's development. *Child Development*, *85*, 1257–1274.

4 Rusby, J. C., Jones, L. B., Crowley, R., & Smolkowski, K. (2013). The child care ecology inventory: A domain-specific measure of home-based child care quality to promote social competence for school readiness. *Early Childhood Research Quarterly*, *28*, 947–959.

5 National Association for the Education of Young Children. (2019). *NAEYC early learning program accreditation standards and assessment items*. Washington, DC: Author.

6 Hemmeter, M. L., Ostrosky, M. M., Artman, K. M., & Kinder, K. A. (2008). Moving right along... planning transitions to prevent challenging behavior. *Young Children*, *63*, 18–25.

7 Hemmeter et al. (2008).

8 Hemmeter et al. (2008).

9 www.virtuallabschool.org/preschool/learning-environments

10 www.virtuallabschool.org/preschool/guidance

11 Halle, T. G., Metz, A. J., & Martinez-Beck, I. (Eds.). (2013). *Applying implementation science in early childhood programs and systems*. Baltimore, MD: Brookes.

12 Blewitt, P., Rump, K. M., Shealy, S. E., & Cook, S. A. (2009). Shared book reading: When and how questions affect young children's word learning. *Journal of Educational Psychology*, *101*, 294–304.
13 Reutzel, D. R., & Jones, C. D. (2013). Designing and managing effective early childhood classroom environments. In D. R. Reutzel (Ed.), *Handbook of research-based practice in early education* (pp. 81–99). New York: Guilford.
14 Roskos, K., & Neuman, S. B. (2011). The classroom environment. *The Reading Teacher*, *64*, 110–114.
15 Morrow, L. M., Berkule, S. B., Mendelsohn, A. L., Healey, K. M., & Cates, C. B. (2013). Learning through play. In D. R. Reutzel (Ed.), *Handbook of research-based practice in early education* (pp. 100–118). New York: Guilford.
16 Bulotsky-Shearer, R. J., Wen, X., Faria, A.-M., Hahs-Vaughn, D. L., & Korfmacher, J. (2012). National profiles of classroom quality and family involvement: A multilevel examination of proximal influences on Head Start children's school readiness. *Early Childhood Research Quarterly*, *27*, 627–639.
17 Hatfield, B. E., Hestenes, L. L., Kintner-Duffy, V. L., & O'Brien, M. (2013). Classroom emotional support predicts differences in preschool children's cortisol and alpha-amylase levels. *Early Childhood Research Quarterly*, *28*, 347–356.
18 National Association for the Education of Young Children. (2020). *Developmentally Appropriate Practice: A Position Statement of the National Association for the Education of Young Children*. Washington, DC: Author.
19 National Association for the Education of Young Children (2020).
20 National Association for the Education of Young Children (2019).
21 Of the 27 foundation skills promoted in the ELM curriculum, two creative expression skills are combined for observation purposes. There is not a guide for observing a child's positive sense of self, an important skill that is challenging to assess. There is an assessment plan but not an observation guide for letter knowledge.
22 Division for Early Childhood of the Council for Exceptional Children. (2015). *DEC recommended practices monograph series no. 1: Enhancing services for young children with disabilities and their families.* Author: Arlington, VA.
23 National Association for the Education of Young Children (2020).
24 National Association for the Education of Young Children (2019).
25 www.virtuallabschool.org/preschool/family-engagement
26 Bassok, D., & Latham, S. (2017). Kids today: The rise in children's academic skills at kindergarten entry. *Educational Researcher*, *46*, 7–20.
27 The following versions of the *Guide for Observing and Individualizing* offer portfolio examples: Language/Literacy: Oral language; Mathematics: Pattern knowledge; Self-Regulation: Concentration; Social-Emotional: Relationship skills; Social Studies: Appreciation of individual and family diversity; Creative Expression: Skills that support creative expression; Science: Inquiry skills; Physical/Health: Motor development

Appendix

Classroom: 121 **Staff:** T.R.

ELM Planning Form: Week of October 16, 2017

3–5 Years

Adaptations of ELM Activity Plans

	Large/Small Group	Centers
Language/Literacy	Point to and say each component word twice.	Provide pic cards for cupcake, fireman, raincoat, toothbrush, snowman.
Mathematics	Display small numeral cards to help children with counting groups.	Provide small numeral cards for use as a reference.
Self-Regulation	Review purple and orange before doing circle game.	None
Social-Emotional	Point out children's friendly actions in classroom each day.	Provide Chrysanthemum book.
Social Studies	Begin session with children talking again about their grandparents	None
Science or Creative Expression	Use 5 Senses chart each day as a reference.	None
Physical/Health	Make sure each child is standing next to a chair when balancing poses are done.	None

Tailored Learning Supports

(see Snapshots of Child Progress)

Child Initials	Activity
M.T.	Say each request 2x while making eye contact in S-R game and other times.
R.S.	Suggest he look for and say names of basic shapes outside. Take shape cutouts for R.S. to use as a reference.
C.R.	Provide costumes (tutu, etc.) in dramatic play. Encourage use of new words from Amazing Grace, especially ballet and audition.
K.B.	Provide chalk and water outdoors for comparing the looks of wet and dry chalk on sidewalk.
L.V.	Provide clay and play dough throughout week. Invite L.V. to describe her sculptures.
A.C.	Place 2 cones about 5 feet apart outside. Encourage A.C. to hop from cone to cone.
Q.T.	Provide slightly more challenging activities of interest (puzzles, game, drawing) and encourage him to talk about what he is doing.

Other Centers

Manipulatives	Lacing beads
Listening	Chicka, Chicka, Boom, Boom

Outdoor Experiences

(include adaptations of ELM activity plans)

If raining during Day 3 science activity, secure large motor room.

Next Time: Reflections on the Week (Week of October 9)

L/L: Children seemed to understand better when I pointed to words and spaces.

Math: Children did well in matching groups of items (Days 1–3). Struggled when just heard the number in Simon Says game.

S-E: Loved the book and listened well! Didn't seem to grasp that children were helpful to Sarah.

SS: Loved talking about their families and doing the class book. Need more time to share.

P/H: Needed balance support for hopping. Needed more space.

CE: Sculpting had a calming effect. Put dough/clay in art area.

Connections with Families

Meet with T.M.'s family about upcoming move.

Make available recipes for play dough (in the FCC section).

3–5 Years

Self-Regulation: Concentration

WHEN INTRODUCED AND EMPHASIZED: Weeks 4, 10–11, 14, 17, 20, 23, 26, 29, 32, and 35

BEHAVIORS TO OBSERVE

- Concentrating on an Experience
- Concentrating on Self
- Concentrating on Others

OBSERVATION OPPORTUNITIES

Concentrating on an Experience

In what ways does the child concentrate on an activity as he/she:

- puts puzzle pieces together (Week 4, Day 1 center activity)?
- puts away materials (any cleanup period after Week 4, Day 1)?
  - example: attempts to match blocks to the block outline when returning blocks to a shelf
- plays and creates (any free play period after Week 4, Day 1)?
  - examples: stacks blocks on top of each other; mixes two colors to create a preferred color
- pays attention to and attempts to follow requests in a circle game?
  - examples *Orange Circle, Purple Circle* (Week 8, Day 1 or Week 13, Day 2); *The Freeze Game* (Week 9, Day 1 or Week 15, Day 1)

Concentrating on Self

In what ways does the child concentrate on self as he/she:

- participates in a breathing exercise (Weeks 10, 17, 20, and others)?
  - examples: watches a stuffed animal/toy move on his/her stomach as he/she breathes; attempts to relax body after scrunching up face or squeezing muscles tight
- calms body for a rest (any rest time after Week 10, Day 1)?
  - examples: puts hand on tummy; appears to focus on breathing; takes deep calming breaths
- engages in a yoga pose (Weeks 11,14, 23, and others)?

Concentrating on Others

In what ways does the child concentrate on others as he/she:

- helps put away materials with staff or other child(ren) in the classroom (any cleanup time after Week 20, Day 1)?
  - example: picks up dolls after noticing another child put away dishes
- participates in the *Hello Game* (Week 20, Day 1)?
- listens to what staff or other child(ren) say during an organized activity (any large or small group activity after Week 3)?

FOLLOW-UP LEARNING SUPPORTS

Reinforce

The following activities are designed to support the ongoing development of concentration skills.

- Verbally acknowledge children's appropriate behaviors in concentrating on activities, self, and others.

Concentrating on an Experience

- Encourage a child to describe what he/she is doing to concentrate on an activity.
  - examples: "How do you figure out where a puzzle piece might go on the puzzle board?" Invite a child to play games that require concentration, such as *Jenga*®. Invite a child to complete an activity that involves concentration, such as drawing a still-life picture or doing a puzzle.

Concentrating on Self

- Encourage the child to use the book *The ABCs of Yoga for Kids* by Teresa Power to practice various poses.
- During a mealtime, encourage children to focus on how full their stomach feels, the taste of a food item, and how their mouth feels when chewing.

Concentrating on Others

- Invite a child to participate in an activity in which he/she has to focus on the other child's actions, such as determining how many pennies he/she and another child can put on a boat before the boat sinks.
- Encourage a child to be aware of others by naming classroom children who are absent today or who are playing in a specific area of the room.

Reintroduce

The following activities are designed to support the development of concentration among children who find it challenging to concentrate. The activities are also appropriate for all children.

Concentrating on an Experience

- Repeat Week 4, Day 1. Remind children what it means to concentrate. Help a child describe how each person is concentrating in the two pictures shown in the activity. Practice one of the activities shown in a picture.
- Provide materials that promote concentration. Draw attention to ways in which a child(ren) is concentrating or attempting to concentrate.
  - examples: "I see your eyes are looking at the puzzle you are doing." "I see you are taking deep breaths while you work on the puzzle."
- Remember that children are most likely to concentrate on activities that they find interesting and enjoyable.
  - examples: caring for a classroom pet, building with blocks, drawing, doing puzzles

Concentrating on Self

- Repeat Week 10, Day 1. Remind children how to concentrate on their breathing to help their bodies feel calm. Help children remember how to quiet their minds and make their thoughts less noisy.
- Encourage children to talk about what they are doing during a yoga pose.
  - examples: "I am concentrating on taking deep breaths." "I am paying attention to how to hold my pose."

Concentrating on Others

- Repeat Week 20, Day 1. Remind children what it means to concentrate. Help children think of examples of concentrating on others. Support children as they look at each other and say what color another child's eyes look like.
- Draw attention to how children are concentrating as part of a circle game, such as *Drum Beats*.
  - examples: "We are concentrating on many different things." "We are paying attention to the drum and to what we are doing with our bodies." "We are making sure we do not bump into anyone."

EXAMPLES OF OBSERVATIONS AND FOLLOW-UP PLANS

Concentrating on an Experience (Quentin)

Observation #1 (10-02-2017): During center time, I asked Quentin to tell how he figured out where a puzzle piece might go. He said, "This piece has blue on it like the sky at the top of the puzzle. I tried putting the piece at the top. It fit!"

Observation #2 (10-02-2017): During cleanup, Quentin began picking up blocks in the block area and putting them back on the shelf. Alex ran in front of Quentin, laughing as he ran. Quentin ignored Alex and continued to put the blocks on the shelf.

Observation #3 (10-03-2017): During free play, Quentin sat at a table with number pegboards. He picked up a board and counted the dots on the board. He said, "1, 2, 3, 4. Four dots. I need to find the number five pegboard."

Summary: I observed Quentin during center time, cleanup, and free play. In each situation, Quentin demonstrated skill in concentrating on an activity. In two activities (puzzle and pegboard), he talked about what he was doing to solve a problem.

Follow-up Plan: Provide slightly more challenging activities of interest to Quentin (puzzles, games, drawing) and encourage him to talk about what he is doing.

Portfolio Example: We are helping children learn how to concentrate on an activity. I observed Quentin during center time, clean-up, and free play. In each situation, Quentin demonstrated skill in concentrating on an activity. In two activities (puzzle and pegboard), he talked about what he was doing to solve a problem. We are offering Quentin slightly more challenging activities that are of interest to him (especially puzzles) and encouraging him to talk about what he is doing.

Concentrating on Self (Sarah)

Observation #1 (11-27-2017): Sarah put her hand on her stomach and took deep breaths in and out as the staff member counted and coached on how to breathe deeply. Sarah relaxed her face after scrunching it up and pretending there was an imaginary butterfly on it.

Observation #2 (week of 11-27-2017): I observed how Sarah got ready for rest time on three different days this week. She did the same thing each day. She rolls back and forth on her cot and then stands up to fluff her blanket. She lays back down and breathes loudly. Then she asks for a staff member to rub her back.

Summary: I observed Sarah during a deep breathing activity. She seemed fully focused on her breathing and relaxing her face muscles. On three different days in one week, I observed how Sarah gets ready for rest time. Each day she followed the same routine (which included breathing loudly) and then asked for someone to rub her back.

Follow-up Plan: Help Sarah get ready for rest time by building on her breathing efforts. Offer verbal guidance on breathing deeply the same way she does in our breathing activities. Improving Sarah's focus on breathing may reduce her requests for back rubs.

Portfolio Example: We are helping children learn how to concentrate on their own behaviors, feelings, and thoughts. I observed Sarah during a deep breathing activity led by a staff member. She seemed fully focused on her breathing and relaxing her face muscles. On three different days in one week, I observed how Sarah gets ready for rest time. Each day she followed the same routine (which included breathing loudly) and then asked for someone to rub her back. We are helping Sarah get ready for rest time by building on her breathing efforts. We are offering verbal guidance on breathing deeply, the same way she does in our breathing activities.

ELM Snapshot of Child Progress: 3–5 Years

Child: *Q.T.* **Classroom:** *121* **Staff:** *T.R.* **Period:** *Aug. 28, 2017* **to** *June 27, 2018*

Foundation Skill	**Observed or Assessed** (dates)	**Follow-Up Learning Plan**
Language/Literacy		
Oral language (begins Week 2)		
Understanding and using new words		
Understanding and remembering key information in a book	*April 4, 6*	*2x week: Provide book and felt board characters to promote QT's interest in retelling stories.*
Understanding how to draw inferences from book information		
Phonological awareness (begins Week 1)		
Identifying sounds	*Sept. 5, 7*	*1x day: Show QT 2 items and make their sounds. Invite QT to close eyes, make item sounds again, and ask what made sound.*
Recognizing, naming, and suggesting words that rhyme		
Forming and segmenting compound words (assessed week 11)	*Nov. 9*	*1x day: Show up to 4 compound word cards, 1 at a time. Say 1 component word. Ask: What word is left?*
Segmenting words into syllables and blending syllables (assessed week 16)	*Dec. 12*	*1x day: Encourage QT to say his family members' names in robot talk.*
Identifying the initial sounds of familiar words (assessed week 23)	*Feb. 8*	*1x day: Show pics of 3 items (2 with the same initial sound). Invite QT to choose items that start with same sound.*
*Blending the two initial sounds (body) with the ending sounds (coda) of one-syllable word (assessed week 30)	*N/A*	*Does not seem ready to learn this skill.*
*Blending the initial sound (onset) with the remaining sounds (rime) of one-syllable word (assessed week 30)	*N/A*	*Does not seem ready to learn this skill.*
*Identifying final sound	*N/A*	*Does not seem ready to learn this skill.*
Letter knowledge (begins Week 6)		
Letter sounds		
Identifying uppercase letters (assessed week 43)	*June 27*	*3x week: Encourage QT to make uppercase letters in the air.*
Print Knowledge (begins Week 1)		
Understanding how books work		
Understanding how sentences work		
Writing (begins Week 7)		
Beginning skills in forming letters and words		

*For children who are ready to learn this advanced skill

ELM Snapshot of Child Progress: 3–5 Years continued

Child: *Q.T.* **Classroom:** *121* **Staff:** *T.R.* **Period:** *Aug. 28, 2017* **to** *June 27, 2018*

Foundation Skill	**Observed or Assessed** (dates)	**Follow-Up Learning Plan**
Mathematics		
Number knowledge (begins Week 1)		
Understanding small numbers		
Understanding comparison words used with number quantities		
One-to-one counting (assessed week 13)	*Nov. 22*	*2x week: Invite QT to set the table for lunch.*
Understanding that the last number counted indicates "how many" (assessed week 13)	*Nov. 22*	*1x day: Ask QT to make groups of 6–9 counters.*
Recognizing and naming numerals (assessed week 22)	*Feb. 2*	*3x week: Read a counting book and encourage QT to name the numerals in the book.*
Understanding the concept of "one more" (assessed week 27)	*March 7*	*2x week: Offer beanbag activity from Week 21, Day 4 outside.*
Geometric and spatial knowledge (begins Week 4)		
Recognizing and labeling basic shapes		
Creating basic shapes		
Recognizing how shapes are related to each other		
Recognizing variations of basic shapes		
Pattern knowledge (begins Week 14)		
Identifying basic patterns		
Creating basic patterns	*Jan. 9, 11*	*2x week: Invite QT to lead children in movement pattern during a transition.*
Creating more complex patterns		
Measurement knowledge (begins Week 24)		
Assigning number values when measuring		
Using basic measurement skills		
*Understanding and using standard forms of measurement		

*For children who are ready to learn this advanced skill

ELM Snapshot of Child Progress: 3–5 Years continued

Child: *Q.T.* **Classroom:** *121* **Staff:** *T.R.* **Period:** *Aug. 28, 2017* **to** *June 27, 2018*

Foundation Skill	**Observed or Assessed** (dates)	**Follow-Up Learning Plan**
Self-Regulation		
Self-control (begins Week 1)		
Self-control of behaviors		
Self-control of emotions		
Self-control of thoughts		
Concentration (begins Week 4)		
Concentrating on an experience	*Oct. 2, 3*	*Provide more challenging activities of interest to QT (puzzles, games, drawing) and encourage QT to talk about what he is doing.*
Concentrating on self		
Concentrating on others		
Executive function (begins Week 8)		
Paying attention and flexibly shifting focus		
Holding onto and using information		
Inhibiting thoughts and responses inappropriate to situation	*April 30, May 1*	*1x week: After children understand game, invite QT to be the leader of the game.*
Social-Emotional		
Relationship skills (begins Week 1)		
Initiating Play		
Sharing, taking turns, and cooperating with peers or adults		
Solving social problems		
Being friendly and helpful		
Emotion knowledge (begins Week 10)		
Understanding different emotions	*Dec. 6, 7*	*2x week: Ask QT to point to an emotion on Our Feelings poster and talk about why someone might feel this way.*
Managing emotions		
Perspective-taking (begins Week 28)		
Understanding another person's perspective		
Personal responsibility (begins Week 32)		
Understanding and taking personal responsibility		

ELM Snapshot of Child Progress: 3–5 Years continued

Child: *Q.T.* **Classroom:** *121* **Staff:** *T.R.* **Period:** *Aug. 28, 2017* **to** *June 27, 2018*

Foundation Skill	**Observed or Assessed** (dates)	**Follow-Up Learning Plan**
Social Studies		
Appreciation of individual and family diversity (begins Week 1)		
Understanding some of the ways individuals are unique		
Understanding some of the ways families are unique		
Knowledge of social/physical environments (begins Week 10)		
Characteristics of physical environments		
Characteristics of social environments		
Concepts of time (begins Week 31)		
Understanding yesterday, today, tomorrow, morning, afternoon		
Understanding how families lived long ago		
Creative Expression		
Appreciation and knowledge of creative expression (begins Week 1)		
Understanding how an artist creates art		
Understanding basic dance concepts		
Understanding music concepts		
Understanding drama concepts		
Skills that support creative expression (begins Week 5)		
Creating one's own artwork		
Exploring basic dance movements		
Creating music		
Creating drama		

ELM Snapshot of Child Progress: 3–5 Years continued

Child: *Q.T.* **Classroom:** *121* **Staff:** *T.R.* **Period:** *Aug. 28, 2017* **to** *June 27, 2018*

Foundation Skill	**Observed or Assessed** (dates)	**Follow-Up Learning Plan**
Science		
Inquiry skills (begins Week 3)		
Using inquiry skills	*Oct. 30, 31*	*2x week: Provide QT with balance scale and items that weigh similar amounts. Invite QT to use scale to compare items.*
Understanding basic characteristics of:		
living and nonliving things (begins Week 12)		
life cycles (begins Week 19)		
habitats (begins Week 26)		
earth and space (begins Week 37)		
Physical/Health		
Motor Development (begins Week 4)		
Gross motor		
Fine motor		
Good health practices (begins Week 1)		
Knowledge of safety rules, routines, and emergency procedures		
Knowledge of how to take good physical care of self	*Feb. 22, 23*	*Provide food pictures from Week 20, Day 5 to promote QT's interest in healthy foods. Invite him to make new riddles.*

ELM Activity Observation Checklist

Classroom: *218* **Staff:** *A.T.* **Date:** *10-10-2017* **Begin/End Time:** *9:30–10:30*

Activity: *Math Activity—Counting Things (Week 7, Day 2)* **Observer:** *S.J.*

Observe one ELM large/small group activity offered during its typical time. Use the activity plan in the ELM curriculum as a reference for the observation. Use one Classroom Observation Checklist form for each ELM large/small group activity you observe. Observe at least 15 minutes of time devoted to child-initiated activities.

Planning and Preparation

	NA	No	Partial	Yes
1. The physical space for an ELM large/small group activity was arranged in advance of the session.	☐	☐	☐	☑
2. Materials used in an ELM large/small group session and in the center activity were gathered in advance of the session.	☐	☐	☐	☑
3. The ELM Planning Form for this week includes staff-determined adaptations of large/small group activities. (Adaptations on the planning form may not apply to the activity you observe.)	☐	☐	☑	☐
4. The staff member's implementation of the ELM large/small group activity suggested advance planning and preparation had been done. Evidence might include: activity notes (sometimes on a 3 x 5 card) prepared by staff member; staff member singing a song without hesitation; staff member's book sharing suggests familiarity with the book.	☐	☐	☐	☑

Notes:

No adaptations for Math on ELM Planning Form. A.T. was prepared for the activity (materials were in place, sufficient seating for the children). Note cards were written to help with implementation of the activity. A.T. was comfortable with the book content. Transition to the group was orderly. Children seemed to know what to expect and how to act.

ELM Large/Small Group Activity	**NA**	**No**	**Partial**	**Yes**
5. Staff member attempted to connect the content of the activity to children's experiences and/or current understandings.	☐	☐	☐	☑
6. Staff member frequently looked at and listened to children during the activity.	☐	☐	☑	☐
7. The activity seemed well matched to children's abilities, with the staff member making adaptations during the activity if it appeared children were confused or not sufficiently engaged.	☐	☐	☑	☐
8. Staff member used an appropriate range of instructional strategies, including questions, to facilitate children's participation and encourage learning.	☐	☐	☑	☐
9. The activity plan's goal and content were addressed during all or nearly all of the session (no significant "drift").	☐	☑	☐	☐
10. During a book sharing, the staff member (a) offered child-friendly definitions of novel words, (b) acknowledged child questions or comments, (c) used his/her own words to describe and connect book illustrations to the book's story or information, and (d) facilitated children's discussion of book information.	☐	☐	☑	☐
11. Staff member used an engaging transition from the large/small group session to the next segment of the schedule.	☐	☐	☐	☑

Notes:

5: Related it to what they had for breakfast and setting the table for lunch.

6: Listened to the children but did not always have eye contact with them.

7: Did not take opportunity to count items in the book.

8: Missed some opportunities for children's engagement with the book.

9: Quickly moved to activity about healthy food to eat.

10: Porridge is like oatmeal–had for breakfast yesterday–not counting the items.

11: Walking like bears.

A.T. started the activity by addressing the learning goal (one-to-one counting) but it ended up being an activity about health and eating healthy food. It had quite a bit of drift from the original learning goal. A.T. connected the activity to both what the children sometimes have for breakfast and setting the table for lunch. She followed up on children's comments about food but let he food topic take over the activity. It was hard to know if the children understood the counting as part of the activity.

Transition to outside play was clever–maintaining the bear idea and walking like bears.

Child-initiated Activities	NA	No	Partial	Yes
12. If you observe during center time: There is a center activity directly related to the content of the large/small group session you observed.	☐	☐	☐	☑
13. Staff member uses naturally occurring opportunities to mention a novel word or concept or information related to a large/small group activity (it may be a large/small group session you did not observe).	☐	☐	☐	☑
14. Staff member actively monitors children's efforts and asks questions or offers suggestions directly related to children's (or a child's) interests or actions without directing the activity.	☐	☐	☑	☐
15. Staff member encourages children to express their ideas.	☐	☐	☐	☑
16. Staff member is involved in a one-to-one exchange with a child. Examples: a brief back-and-forth conversation, a book, a response to a child question.	☐	☐	☐	☑

Notes:

13: Reminded several children in block center of basic shape names.

14: Watched two groups of children and asked some questions about their activities during first part of center time. Was not engaged in second half.

15: Asked a child what he was building. Asked another child to tell about her painting.

16: Talked briefly with child looking at pictures in book.