Engaging Children in STEM

Standards

This professional development training module is aligned to Massachusetts standards and guidelines.

Massachusetts Quality Rating and Improvement System (QRIS)

Center and School Based:

- Curriculum and Learning 1B: Teacher-Child Relationships and Interactions: Level
 3 Staff engage children in meaningful conversations, use open-ended questions and
 provide opportunities throughout the day to scaffold their development of more complex
 receptive and expressive language, support children's use of language to share ideas,
 problem solve and have positive peer interactions.
- Curriculum and Learning 1B: Teacher-Child Relationships and Interactions: Level
 4 Staff utilizes teaching strategies that ensure a positive classroom environment, engage children in learning and promote critical thinking skills.

Family Child Care:

Curriculum and Learning 1B: Teacher-Child Relationships and Interactions: Level
4 Educators engage children in meaningful conversations, as age and developmentally
appropriate, use open- ended questions and provide opportunities throughout the day to
scaffold their language to support the development of more complex receptive and
expressive language, support children's use of language to share ideas, problem solve
and have positive peer interactions; Educators utilize teaching strategies that ensure a
positive learning environment, engage children in learning and promote critical thinking
skills.

National Association for the Education of Young Children (NAEYC)

Guidelines for Developmentally Appropriate Practice:

• 2) Teaching to enhance development and learning D Teachers plan for learning experiences that effectively implement a comprehensive curriculum so that children attain key goals across the domains (physical, social, emotional, cognitive) and across

- the disciplines (language literacy, including English acquisition, mathematics, social studies, science, art, music, physical education, and health).
- (2) Teaching to enhance development and learning E Teachers plan the environment, schedule, and daily activities to promote each child's learning and development.
- (2) Teaching to enhance development and learning E.1 Teachers arrange firsthand, meaningful experiences that are intellectually and creatively stimulating, invite exploration and investigation, and engage children's active, sustained involvement. They do this by providing a rich variety of materials, challenges, and ideas that are worthy of children's attention.
- (2) Teaching to enhance development and learning E.2 Teachers present children with opportunities to make meaningful choices, especially in child-choice activity periods. They assist and guide children who are not yet able to enjoy and make good use of such periods.
- (2) Teaching to enhance development and learning E.3 Teachers organize the daily and weekly schedule to provide children with extended blocks of time in which to engage in sustained play, investigation, exploration, and interaction (with adults and peers).
- (2) Teaching to enhance development and learning E.4 Teachers provide experiences, materials, and interactions to enable children to engage in play that allows them to stretch their boundaries to the fullest in their imagination, language, interaction, and self-regulation as well as to practice their newly acquired skills.
- (2) Teaching to enhance development and learning F Teachers possess an extensive repertoire of skills and strategies they are able to draw on, and they know how and when to choose among them, to effectively promote each child's learning and development at that moment. Those skills include the ability to adapt curriculum, activities, and materials to ensure full participation of all children. Those strategies include, but are not limited to, acknowledging, encouraging, giving specific feedback, modeling, demonstrating, adding challenge, giving cues or other assistance, providing information, and giving directions.
- (2) Teaching to enhance development and learning F.2 To stimulate children's thinking and extend their learning, teachers pose problems, ask questions, and make comments and suggestions.
- (2) Teaching to enhance development and learning F.3 To extend the range of children's interests and the scope of their thought, teachers present novel experiences and introduce stimulating ideas, problems, experiences, or hypotheses.

- (2) Teaching to enhance development and learning F.6 To enhance children's conceptual understanding, teachers use various strategies, including intensive interview and conversation, that encourage children to reflect on and "revisit" their experiences.
- (2) Teaching to enhance development and learning H Teachers know how and when to use the various learning formats/contexts most strategically.
- (2) Teaching to enhance development and learning H.2 Teachers think carefully about which learning format is best for helping children achieve a desired goal, given the children's ages, development, abilities, temperaments, etc.
- (2) Teaching to enhance development and learning J.1 Teachers incorporate a wide variety of experiences, materials and equipment, and teaching strategies to accommodate the range of children's individual differences in development, skills and abilities, prior experiences, needs, and interests.
- (3) Planning curriculum to achieve important goals A Desired goals that are
 important in young children's learning and development have been identified and clearly
 articulated.
- (3) Planning curriculum to achieve important goals A.1 Teachers consider what children should know, understand, and be able to do across the domains of physical, social, emotional, and cognitive development and across the disciplines, including language, literacy, mathematics, social studies, science, art, music, physical education, and health.
- (3) Planning curriculum to achieve important goals C.1 Teachers are familiar with the understandings and skills key for that age group in each domain (physical, social, emotional, cognitive), including how learning and development in one domain impact the other domains.
- (3) Planning curriculum to achieve important goals D Teachers make meaningful connections a priority in the learning experiences they provide children, to reflect that all learners, and certainly young children, learn best when the concepts, language, and skills they encounter are related to something they know and care about, and when the new learnings are themselves interconnected in meaningful, coherent ways.
- (3) Planning curriculum to achieve important goals D.2 Teachers plan curriculum
 experiences to draw on children's own interests and introduce children to things likely to
 interest them, in recognition that developing and extending children's interests is
 particularly important during the pre- school years, when children's ability to focus their
 attention is in its early stages.



