

Professional Development Toolbox

Environment, Materials, and Program Structure



- ❖ Have teachers read “Creative Pathways to Mathematics,” by Doug Clements. Go over the Math in Manipulative highlight box. Ask teachers to identify the activities and materials listed that are currently available in their program. Work together to identify at least two new materials and strategies to add. Create a concrete action plan, including the necessary steps to obtain and utilize the materials and activities. (PCF, Vol. 1, pp. 261, 284)
- ❖ Discuss with teachers how to increase the value of math in the program environment by enhancing each classroom area with materials to count and/or measure. Walk around the room together identifying materials in each area that could be counted or measured. Identify areas that need additional materials. (PCF, Vol. 1, pp. 246, 278)
- ❖ Discuss the importance of using materials that have a surface and/or texture change to delineate personal space to assist children in developing spatial awareness. For example, use individual carpet squares that have a tactile edge instead of one large rug with different colored circles in the design for circle time. (PCF, Vol. 1, p. 286; *Inclusion Works!*, p. 35)
- ❖ Discuss the difference between standard and non-standard measurement. Brainstorm materials that can be used for non-standard measurement. Support teachers in adding at least one of these materials to each classroom area. (PCF, Vol. 1, pp. 274, 277)
- ❖ Give teachers a copy of *Engaging Children in Early Mathematical Experiences* (CPIN mathematics handbook). Pages 13-14 provide mathematical tools for children

in their environment. Help teachers plan how they will obtain three new things to add to support children's mathematical learning.

- ❖ Invite teachers to turn to page 19 of *The Integrated Nature of Learning* and to read the following section: Intentional teaching enhances children's learning experiences. After reading, help teachers to identify an area of the environment in which children play using mathematical concepts. Next, guide teachers through a reflective conversation about the strategies listed on page 19 in relation to this identified area of the classroom. After reflecting on the questions below, ask teachers to create a list of materials they will add to the environment to support children's exploration. Finally ask teachers to brainstorm how they will obtain the materials. Prompt teachers to think about how to involve families and other community resources in obtaining the materials.
 - How do you notice children wondering about what things are like?
 - How do you notice what children do in the areas they choose to play?
 - How do you notice children investigating a variety of ways of relating one thing to another?
 - How do you notice children constructing, transforming, and representing with the materials at hand?