## Cognitive Development COMPONENT 2: MATHEMATICAL THINKING AND EXPRESSION

## EFFECTIVE STRATEGIES TO SUPPORT CHILDREN'S DEVELOPMENT AND LEARNING

- Talk frequently with children throughout the day using math words, such as words referring to quantity, number words, size, more, less, etc. (talk about how many Cheerios® on the plate, "Your shoes are bigger than the kitty's paws.").
- Point to and count when working on activities such as building a block tower or passing out materials.
- Read books that present basic mathematics concepts in the context of everyday environments or routines (home, going to bed, mealtimes, etc.).
- Use the computer to help children explore mathematical concepts together by using a software program where two children work together to count objects, explore shapes, and solve mathematical problems.
- Look for shapes and patterns in the natural environment and teach concepts through everyday *routines* and interactions. For example, say, "I see that you have red circles on your shirt."
- Help children pair items that go together because they are used together (pail and shovel).
- Sing counting songs, such as "5 Little Ducks," do finger plays and number rhymes, using fingers or other objects to indicate the numbers being sung.
- Talk about adding to and taking away from blocks and other toys as children play with them.
- Ask children for a specific number (1, 2, 3, 4, or 5) of items ("Hand me 2 dolls." "Give me 3 crayons.").

- Provide opportunities for counting in play, even when the items are scattered and not in a line (number of children in the room, number of children wearing shoes that tie, number of stop signs or trees in the neighborhood, etc.).
- Ask children for a specific number (1, 2, 3, 4, or 5) of items ("Hand me 2 dolls." "Give me 3 crayons.").
- Practice counting backward during activities such as space shuttle countdowns, running races countdowns, etc.
- Count objects or children using the words first, second, third...tenth, and last.
- Do comparison activities, such as comparing five pieces of paper and three crayons. Discuss which group has more.
  Use matching and counting to determine if groups have more, fewer, or the same. Practice separating a collection of 10 items into 2 equal groups.
- Prompt thinking and analysis by asking open-ended questions ("How will you know how many plates you need for the guests at your party?").
- Provide opportunities for children to sort objects or household items, such as socks, blocks, crayons, groceries, lids, recyclables, and toys.
- Sort and match objects with the same shape and size and lay an object of the same shape and size on top of another to show they are the same. Compare two objects by placing one on top of another and indicate which object takes up more space.
- Play games with children that include asking them to put objects "beside," "next to," "behind," "above," "up," "down," "near," and "far."