HANDOUT 2

Mathematical Reasoning Foundations Map

Mathematical Reasoning*

At around 48 months of age	*At around 60 months of age*
1.0 Children use mathematical thinking to solve problems that arise in their everyday environment.	**1.0 Children expand the use of mathematical thinking to solve problems that arise in their everyday environment.**
1.1 Begin to apply simple mathematical strategies to solve problems in their environment.	**1.1** Identify and apply a variety of mathematical strategies to solve problems in their environment.
Examples	**Examples**
• Reconfigures blocks to build a balanced, tall tower by placing the rectangular blocks at the bottom and triangular blocks at the top. • Asks for one more paintbrush so he can put one brush in each paint cup while helping to set up an easel for painting. • Gives a friend two flowers and keeps two for himself, so they both have the same number of flowers. • Compares the length of her shoe to her friend's shoe by placing them side by side to check who has a longer shoe. • Classifies objects according to whether they can roll or not. • Pours sand from a big bucket to a smaller bucket and realizes that not all the sand can fit. The child looks for a bigger bucket.	• After placing plates and napkins around the snack table, recognizes that he needs one more napkin for the last place and asks the teacher for another napkin. • Following a discussion about the size of the room, works with other children to measure the length of the room using block units, lay blocks of the same size along the wall end to end, and count the number of blocks. • Predicts the number of small balls in a closed box and then communicates, "Let's count." • Has run out of long blocks to complete a road and solves the problem by using two smaller blocks to "fill in" for a longer block. • When in need of six cones to set up an obstacle course but having only four, communicates, "I need two more cones." • Sorts the animal figures into two groups, wild animals for him and pets for his friend, when asked to share the animal figures with a friend.

* Throughout these mathematics foundations many examples describe the child manipulating objects. Children with motor impairments may need assistance from an adult or peer to manipulate objects in order to do things such as count, sort, compare, order, measure, create patterns, or solve problems. A child might also use adaptive materials (e.g., large manipulatives that are easy to grasp). Alternately, a child might demonstrate knowledge in these areas without directly manipulating objects. For example, a child might direct a peer or teacher to place several objects in order from smallest to largest. Children with visual impairments might be offered materials for counting, sorting, or problem solving that are easily distinguishable by touch. Their engagement is also facilitated by using containers, trays, and so forth that contain their materials and clearly define their work space.