

3. Meshing Together Two Stairs

- Empty the blocks out of the 10-box.
- Ask the children to build the stair from 1 to 10 by standing the blocks up vertically.
- Guide the building of the stair from 1 to 9 in the opposite direction (see illustration).
- * Carefully push down the 9-block in place.
- Ask, "9 needs . . . ?"
- A child points to the 1-block and names it, "1."
- Carefully push down the 8-block.
- Ask, "8 needs . . . ?"
- The next child pushes down the 2-block and says, "2."
- Then ask, "7 needs . . . ?"
- A child pushes down the 3-block and says, "3."
- Continue until "Nothing needs . . . ?"
- And a child responds, "The whole 10-block."

Note: Your stairway may begin with the 10-block. Push down the 10-block and say, "10 fills the box by itself." Then go on to say, "But 9 needs . . . ?" and so on.



4. Finding Two Blocks That Go Together in the 10-Box--Discovering the Commutative Property

- Dump out the blocks from the 10-box.
- * Say, "Put two blocks that go together in this box."
- A child gets two "friends" and says, "5 and 5."
- Call on one child after another until the box is filled with combinations.

Note: If children select two blocks that don't go together, let them experiment. Guide them in placing the bigger block on the bottom and let them hunt for the smaller block to go with it. Letting them learn by themselves is far better than telling them the answer.

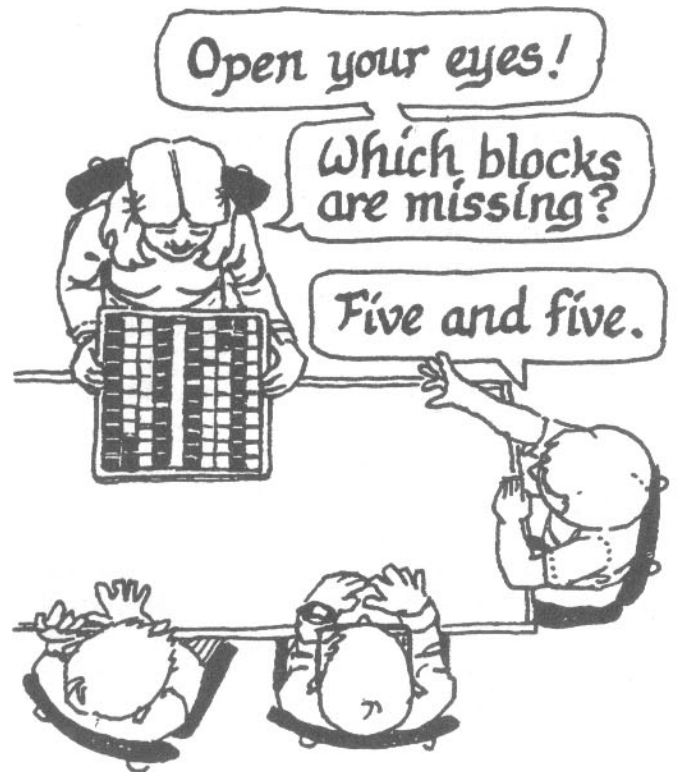
A commutative property can be discovered by the children on their own. They put in 8 and 2, then next to it, 2 and 8. This shows they understand that the order of the addends will not change the sum.



5. Overall View of the Combinations That Make 10

- Scatter the blocks on the table.
- Have the children build the stair from 1 to 10.
- They complete each row: $1 + 9$, $2 + 8$, $3 + 7$, $4 + 6$, $5 + 5$, $6 + 4$, $7 + 3$, $8 + 2$, $9 + 1$, and $10 + 0$.
- * Ask the children to close their eyes.
- Hide one pair of blocks ($5 + 5$).
- Say, "Open your eyes!"
- Ask, "Which blocks are missing?"
- A child names the missing combination, "5 and 5."
- Give the blocks to the child, who returns them to the 10-box.
- Encourage a child to be the teacher.

Note: If a child should be stuck, ask the other children what strategies they use to identify the missing blocks. They may say, "I can see the other pair of blocks in the box." You might suggest that the child count up the lower stair of blocks: "1, 2, 3, 4, 5; oh, 5 and 5!" This helps them focus attention on the different sets of addends.



6. Naming the Blocks That Go Together in the 10-Box

- Scatter the blocks on the table.
- Have the children put the pairs of blocks in the box in sequence, $1 + 9$, $2 + 8$, $3 + 7$, ... $10 + 0$.
- Cover all the combinations with a notebook.
- Ask, "What comes first; 1 and what?"
- When the blocks have been named, move the notebook so they can check that combination.
- * Ask, "What comes next?"
- A child answers, "2 and 8."
- Reveal the blocks as a check.
- Continue until each combination has been named.

