

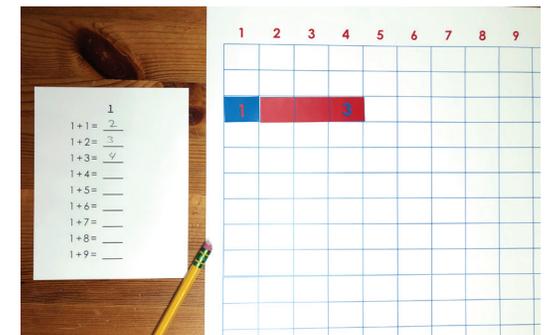
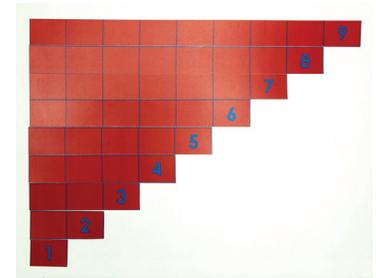
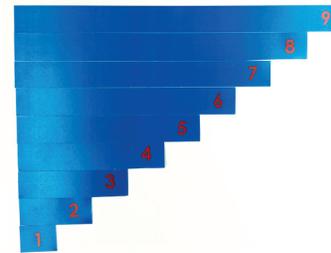
## Using the Addition Strip Boards

### Purpose:

- To master the addition tables (1 to 18—the essential combinations which make all addition possible) and progress towards memorization
- To make addition interesting on the road to abstraction
- To recognize the importance of the number 10 in all additions

### Presentation: A number table

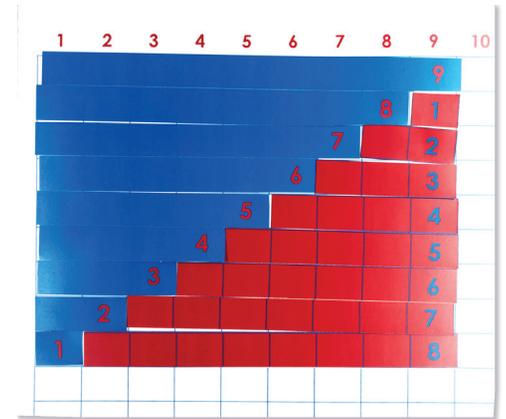
1. Begin the lesson and invite one child to do the work with you. Go together to gather the materials and bring them to a table of the child's choosing.
2. Place the strip board on the bottom center of the table. Place the container of strips on the bottom left of the table.
3. Take out the strips and place them in an orderly manner on the table. When they are out, pick up the largest blue strip and lay it out to the top left of the table (above the board). Continue for all until you have a blue left-aligned stair (just like the number rods). (See image.)
4. Repeat for the red strips, place them just to the right (leaving a small gap) of the blue strips.
5. Discuss what you see on each strip as you place it.
6. Ask, "Can you read all the numbers here across the top of the board?"
7. Point out the red line. Say, "The red line shows us everything that is above or below 10. Ten is a very important number in addition."
8. Say, "We're going to solve some problems and these top numbers are going to tell us our answer. Let me show you."
9. Take out the 1 equation slip. Ask, "What does this say?" Have the child read the equation to you.
10. Take the 1 blue strip and place it in the square under the number 1. Say, "One plus..." Take the 1 red strip and place it in the square to the right of the blue strip. Say, "One makes..." Move your finger up to the top of the right strips edge and say, "Two! One plus one equals two. Let's write it down." Point to the answer and make sure the child understands how you found it.
11. Try the next one on the next row of the grid:  $1 + 2$ . Encourage the child to step in and continue with the whole slip. Fade and observe.
12. Do as many problems as the child is comfortable doing (one table per day is fine; more is fine too).
13. Say, "Now I'll show you a really excellent thing we have, the control chart." Walk over and get the control chart with the child and bring it back to your table.
14. Say, "What was your first one? 1 plus 1." Point to it on the control chart. "And what was your answer? 2. That's right! How about the next one?" Make sure the child reads the equation and answers out loud. They can make corrections as needed.



- When the child is done, encourage them to read back the verified work to you (starting with  $1+1=2$  and on down the table).
- Do a few until the child can do it on his own. Fade and observe.
- Encourage repetition. Complete the lesson and encourage the child to decorate their work.

**Activity #1: All the ways to make a number**

- Begin with one child and set up as in the presentation.
- Say, "I'm going to write a number on this slip of paper and we can find all the ways to make that number! Let's do the first few together."
- Write "9" on the top of a paper. Underline it.
- Take the blue 9 strip and place it on the board.
- Beneath it, place the blue 8 strip. Ask, "What's going to fit to make this 9?" Help the child see that the red 1 fits. Place it on the board.
- Write down your results ( $8+1=9$ ).
- Guide the child to continue. Say, "See if you can find even more ways to make 9." Leave the  $8+1$  strips on the board and continue with the  $7+2$ .
- Continue for all.
- When they are finished, ask, "How can we check to make sure these are correct? The control chart!" Have the child verify it with the control chart. Keep the strip board out and use it as necessary to confirm any mistakes.
- Fade and observe.
- When the child is done verifying their work, encourage them to read it back to you.
- Encourage repetition. Complete the lesson and encourage the child to decorate their work.



**Activity #2: Commutative property**

- Same as Activity #1 but once the child has finished writing down all the equations, say, "Wait a minute...I think we have some repeats here."
- Find two repetitive equations (e.g.,  $9 + 3$  and  $3 + 9$ ) and isolate them on the bottom left of the board's grid.
- Say, "These are the same! It doesn't matter what order the addends are in, the sum is the same." Let the child manipulate the strips to confirm that your conclusion is correct. Then, say, "We don't even need to write it down twice. Let's cross off the repeats." Guide the child to do so, using the strips to verify as much as they like.
- Put one of the repeated equation strips away and return the others to the top of the board.
- Encourage the child to find the remaining repeated equations. Fade and observe.
- When they are done, show them that they can use the Control Chart to verify their work.
- When the child has verified their work, encourage them to read it back to you.
- Encourage repetition. Complete the lesson and encourage the child to decorate their work.

**Notes:**

- If the child makes a mistake on their paper, they can erase it or cross it out and correct it. Don't make a big deal out of it. Be positive!
- The child may discover the commutative property on their own during Activity 1. Introduce it at that point if the child brings it up.