In second grade it is expected that students respond automatically when asked a basic addition facts. The more sophisticated mental operations in mathematics of analysis, synthesis, and evaluation are impossible without rapid and accurate recall of specific knowledge. Learning the arithmetic facts can be pretty hard work for some students. Learning these facts through only rote memorization will make it more difficult than it needs to be for students. Teaching students strategies to help them learn and memorize the arithmetic facts will make life easier on the kids.  
  
**Thinking Strategies for Learning the Addition Facts**  
There are 100 basic arithmetic facts, zero through nine. That’s a bunch. But if we use more effective strategies to help students learn, then memorizing these facts will become easier for the  
students.   
1. **Adding zero**: Students can quickly grasp the rule for adding zero; the sum is always the  
other number. 8 + 0 = 8, 0 + 4 = 4  
2. **Counting on by 1 or 2**: Students can find sums like 5 + 1 or 6 + 2 by simply counting on. This thinking strategy allows students to check off 18 of the addition facts. That  
leaves 63 facts to be learned.  
3. **Sums to 5**: Students can learn combinations to 5, such as 3 + 2 or 4 + 1. Sums to 5 is  
redundant.  
4. **Sums to 10**: Students can learn combinations to 10, such as 6 + 4 or 8 + 2. More facts can be crossed off the list of 100 and we are down to 56 facts to learn.  
5. **Doubles**: For whatever reason, students seem to be able to remember the sums of doubles. That might be a consequence of skip counting in earlier grades. The consequence of knowing doubles is another 6 facts can be checked off our list. That leaves 50 facts to learn, we’re halfway home.  
6. **Adding 10’s**: Students can quickly see the pattern develop when adding tens, the units digit stays the same.  
7. **Doubles plus one**: This strategy overlaps the other strategies of doubles and counting on by one. For instance, 7 + 8 becomes 7 + 7 + 1. Another example, 8 + 9 becomes 8 + 8 + 1.That’s seven more off the list.  
8. **Doubles plus two**: This method works when the addends differ by two. When this occurs it is possible to subtract 1 from one addend and add one to the other addend. This results in a doubles fact that has already been memorized, 7 + 5 becomes 6 + 6. Another example, 6 + 8 becomes 7 + 7. Some people call the Doubles Plus 2 strategy Sharing Doubles and attack the problem differently. Using the Doubles plus 2 strategy, 6 + 8 becomes 6 + 6 + 2. 7 + 5 becomes 5 + 5 + 2. We now have 31 facts left to learn.  
9. **Nines**: It should be pointed out to students that when adding nine, the ones digit in the sum is always one less than the number added to 9. For example 7 + 9 = 16, the 6 is one  
less than 7. Another example, 5 + 9 = 14. 45 facts to go.  
10. **Commutativity**: By changing the order, 3 + 4 to 4 + 3, it should be pointed out that’s an  
additional 21 facts the students now know. That leaves 10 facts to learn. But it’s really five because the commutative property can be used on those 10.  
  
     Using these addition strategies, there are combinations that don’t have a strategy that just have to be memorized. They are 6 + 3, 8 + 3, 9 + 3, 7 + 4, 8 + 4, and 8 + 5.  
      
     I will be teaching these strategies for learning basic addition facts in my class during the first 12 weeks of school.  Please help your child at home by practicing these math facts with flashcards, card games, and/or online apps.