

Our Learning Goals:

- Amounts can be represented by numbers and/or pictures.
- There are multiple strategies to solve addition and subtraction problems with small numbers.
- There are multiple ways to show strategies and solutions.

Structures for Addition and Subtraction

Researchers have separated addition and subtraction problems into categories based on the kinds of relationships involved. These include *join* problems, *separate* problems, *part-part-whole* problems, and *compare* problems (Carpenter & Moser, 1983; Gutstein & Romberg, 1995; Carpenter, Fennema, Franke, Levi & Empson, 1999). In Kindergarten, our TEKS specifically focus on *joining* for addition and *separating* for subtraction using objects and drawings.

In Unit 6, your student will be spending a great amount of time not only counting groups of objects, but investigating what it means to add and subtract. The size of the numbers will increase as they progress through the unit, from adding and subtracting within 5 to adding to 20. Students will need to be able to:

- Model the actions of joining and separating
- Explain the strategies to solve addition and subtraction within 10 using spoken words, concrete and picture models, and number sentences
- Solve word problems to find sums up to 10 and differences within 10

How Can I Help My Student

In math class, students will be asked to model actions for the operations. It is crucial that students analyze what is happening within the story and not be taught any sort of “key” words. Just as in reading, students must be able to retell the story. This same strategy can be utilized in math to describe the action within a problem. Focus on whether they are joining or separating objects. Be sure to have your student explain his/her thinking to you.

What Activities Can I Do At Home?

Read and Act Out – There are many children’s books that lend themselves to modeling or acting out the actions for either addition or subtraction. Counters are helpful for students to utilize in acting out. Below is a partial list but you probably already have several that would work with your student.

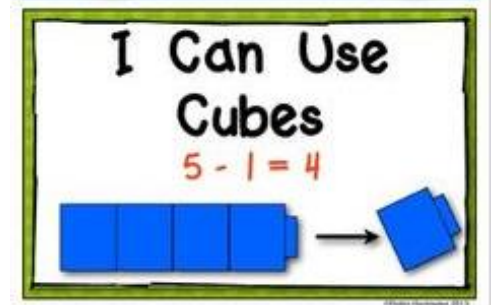
Ten Flashing Fireflies, Sturges, 1997.

Ten Little Monkeys Jumping on the Bed, Kubler and Freeman, 2001.

How Many Snails?, Giganti and Crews, 1994.

Mouse Count, Ellen Stoll Walsh, 1995.

How Many Am I Hiding? – You can use any small manipulative that you may have at home for this game. Count out a quantity of pennies, buttons, paper clips, etc. with your student. I would recommend beginning with 5 objects. Hide a few of them and have your child guess “how many are hiding?” This activity is easy to play, but builds the concept of an unknown quantity that they need for subtraction.



The Cave Game

This is a slight variation of the previous game. You will need counters and blank paper. Have your child create a small “cave” with their hand. Tell them to hide a certain number in the cave. Have your child tell you how many are outside the cave, how many are inside the cave, and how many there are in all. *So, if using seven counters, you might tell them to put three in the cave. Ask how many are outside the cave, and child says 4. How many are inside the cave and child says 3. How many are there together and child says 7.*

You can also model this with symbols or a number sentence as in: $4 + 3 = 7$

