

Dimensions Math
Grade 2 Letter Home
Chapter 2 Addition and Subtraction - Part 1

Home Connection

In this chapter, your child will review their knowledge of mental math strategies taught in first grade. The emphasis is on mental math before "Chapter 3: Addition and Subtraction - Part 2," where the vertical algorithms with regrouping are introduced. See *Mental Math Strategies* document for a full explanation and examples.

Bar models are introduced in this chapter. These models are included as a representational tool to help students understand the quantities in a word problem and their relationships, as well as understand what operations and processes to use to solve them. Bar models will be used for word problems throughout the Dimensions Math Series. There are two main types of models they will work with at this level:

Part-Whole Models extend the understanding of part-whole relationships from a

number bond to a more adaptable representation.

There are 10 students at the park. 7 students are boys. How many students are girls?

$10 - 7 = 3$
There are 3 girls at the park.

Students can easily see from the model, as they could from the number bond, that since they are given the whole and one part, they subtract to find the other part.

Comparison Models allow students to compare quantities. They are particularly useful as

number bonds do not portray comparison quite as well.

There are 10 boys and 7 girls at the park.

(a) How many more boys than girls are at the park?
(b) How many children are at the park altogether?

(a) $10 - 7 = 3$
There are 3 more boys than girls at the park.
(b) $10 + 7 = 17$
There are 17 children at the park altogether.

From this model, students can easily see that they need to subtract to find the answer to (a). Although (b) is a part-whole type of problem, the same model can be used to indicate this.

An advantage to bar models is the bars, which represent numbers, can be moved around to show different relationships more clearly. This will become more important in later levels as the word problems become more complex.

Because the problems involve numbers within 20, some students will solve the problems quickly and not want to show their thinking. It is helpful to remind your child the goal is to learn a new strategy and show their thinking and not just solve the problem.

What can we do at home?

Memorizing math facts is critical for all students to build math fluency. When students have their facts memorized and can automatically recall them, more of their brain's working memory is freed up to focus on more difficult concepts. At this point in second grade the goal is mastery of addition and subtraction facts to 20. There are many fun ways to practice at home to help your child master these facts.

- Play Addition or Subtraction Face-Off: You will need a deck of playing cards with face cards removed (use the ace as a 1). Deal the cards so that each player has the same number of cards. Players flip over 2 cards each and call out their sums. The player with the greatest sum wins and collects all the cards. If there is a tie, repeat, turning over 2 more cards. Continue playing until one player runs out of cards. Or play by subtracting the numbers on their cards.
- KenKen activities are a great way to practice both addition and subtraction as well as logical thinking. Here are some websites where you can customize, print, or complete some KenKen boards. www.kenkenpuzzle.com and www.calculudoku.org
- Check out the addition and subtraction activities on the TCA website: <https://www.tcatitans.org/Domain/200>