

## Unit 6: Addition, Subtraction, and the Number System

TEAMBPCS  
Office of  
Mathematics PreK-12

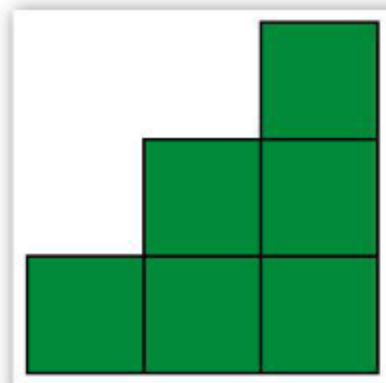
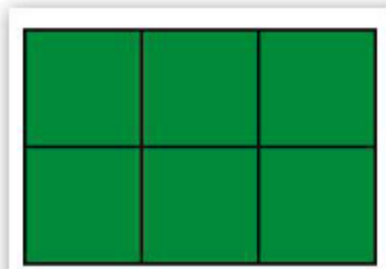
The PreK-12 Mathematics curriculum focuses on problem solving, communication, and critical thinking in order to provide a foundation where every student reaches their potential to become a globally competitive, mathematically literate citizen.

### About this Unit

Students continue to build upon their understanding of numbers and the counting sequence through a variety of activities. They will count different sets of objects and create different number combinations for numbers up to ten. Students practice the story problem routine by acting out and modeling addition and subtraction problems. In this unit, students play games where they practice combining or separating amounts to represent addition and subtraction situations. Students continue to practice writing numbers to ten and count groups of up to twenty objects.

### Counting and Quantity

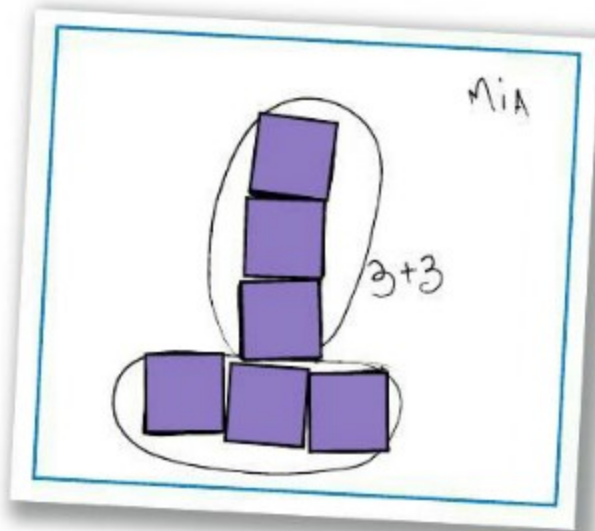
Many of the activities in this unit provide practice with counting larger sets of objects. Students develop visual images for quantities up to ten as they view and rebuild images and find ways to recreate the same quantity. In various games, students count up to twenty objects in different contexts. Kindergarten students develop effective and efficient counting methods through exploring counting jars and counting a group of related objects. Students learn to organize and keep track of the objects they have already counted. Many counting activities connect to the operations of addition and subtraction. For example, the teacher will add a small amount if counting cubes to a set, and ask "How many are there now?" This will lead students to the counting on strategy of addition.



Students use tiles to show different arrangements of the same quantity.

## Addition and Subtraction

Kindergarten students are becoming fluent with counting quantities of objects. They begin to see and describe an amount of objects as made up of two smaller groups. For example, a group of six pennies can be made up of two pennies and four pennies, or five pennies and one penny. The concept of combining groups is essential for understanding addition. Students are also shown how to decompose numbers by separating a total amount into two smaller groups. This sets the foundation for subtraction. Through meaningful practice with groups of objects, students will be able to make sense of number sentences. Throughout the unit, students continue to rehearse the story problem routine by retelling, acting out, and visualizing the action in the problem.



*Sample Student Work*

## Showing Strategies and Solutions

Students use manipulatives, tools, and representations to show solutions to problems and explain their thinking. In this unit, students use Ten-Frames and tiles to represent quantities to 10. Cubes are used to model addition and subtraction situations. Students begin to use written numerals to represent quantities. For example, they will see three dots and write the number 3, or hear five claps and write the number 5. Students begin to justify their thinking and listen to the thought process of other students as well as the teacher.



*Students set up their gameboard to play Racing Bears.*

In the game *Racing Bears*, students roll a number cube and move their bear the correct number of spaces. They try to get each bear to move ten spaces. For a challenge, students may choose to split the roll, for example when rolling a 4 a student may move two bears two spaces each or 4 bears one space each. Students practice recognizing the dot pattern on a dot cube, moving the correct number of spaces, and counting on to ten.

## Helping your child at home

- Practice the counting sequence beginning at any number—not just starting at one.
- Count forward and backward.
- Write numbers with your child and match the correct amount of household objects to the number
- Go on a number hunt—find a certain number of objects, or the written numeral around the house (on clocks, house numbers, etc.)



### Visit these Web-math activities.

### sites for interactive

- [Connect the Dots](http://www.abcya.com/connect_the_dots_10.htm) ([http://www.abcya.com/connect\\_the\\_dots\\_10.htm](http://www.abcya.com/connect_the_dots_10.htm))  
Connect the dots from 1–10 to recognize numerals and the counting sequence.
- [Counting Train](http://www.softschools.com/counting/games/counting_train/) ([http://www.softschools.com/counting/games/counting\\_train/](http://www.softschools.com/counting/games/counting_train/))  
Match the numerals 1–10 with the correct number of objects.
- [Decomposing Numbers](http://www.turtlediary.com/kindergarten-games/math-games-decomposing-numbers.html) (<http://www.turtlediary.com/kindergarten-games/math-games-decomposing-numbers.html>)  
Practice decomposing numbers into two groups.

