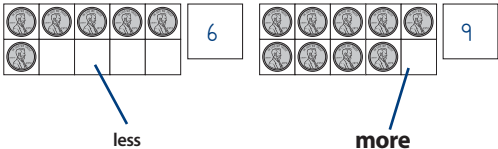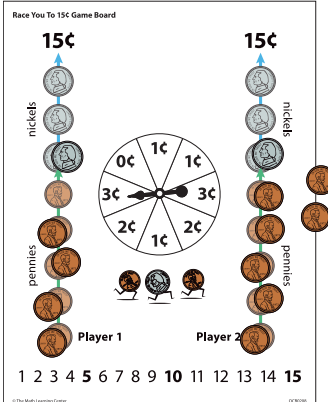**Bridges in Mathematics**
Kindergarten Unit 4

Paths to Adding, Subtracting & Measuring

In this unit your child will:

- Count forward and backward between 0 and 50
- Order and compare numbers from 1 to 10
- Solve addition and subtraction problems within 10
- Compare objects to see which is longer, shorter, or the same length
- Add with pennies and nickels

PROBLEM	COMMENTS
Fill in the missing numbers. *"I started at 4 and counted. I know 5 comes after 4, so 5 is missing. Then I kept counting 6, 7, 8… so 8 is the other missing number."* Circle the numbers greater than 7. *"I know 8, 9, and 10 come after 7, so they are greater than 7."*	Students build a number line from 0 to 10 by placing the numbers in counting order. The number line helps them think about sequence and number relationships such as before, after, and between, more than, and less than.
Solve the squirrel and nut problems. *"Four and 1 more is 5. The squirrel has 5 nuts."* *"If the squirrel has 6 nuts and eats 2 nuts, he has 4 nuts left. I counted backward 6… 5, 4."*	Students make connections between counting and combining, which helps them begin to add and subtract small numbers. They solve simple story problems and play games to find the total or difference when 1, 2, and 3 are added or taken away. *3 + 1 = 4* Students also compare quantities. In this example, they put a blue X on the hand with the fewest pennies.
Color the longest ribbon blue. Color the shortest ribbon red. *"I can see that when the ends are matched, the middle ribbon is longer than the other 2 ribbons. It is the longest. The bottom ribbon doesn't go as far as the others, so it is the shortest."*	Students measure and compare objects in the classroom to develop an understanding of longer, shorter, and the same length. They compare objects informally and then measure them using cubes or craft sticks.

PROBLEM	COMMENTS
Count the pennies in the frame. Draw lines to show which has more and which has less. 6 9 less **more** *"The first ten-frame is 5 on the top and 1 more on the bottom. That's 6. The next frame is filled on top so I counted 5… 6, 7, 8, 9. Nine is more than 6."*	Ten-frames are used to reinforce the idea that 10 is composed of two sets of 5. Students learn the names and values of the penny and nickel. Games like the one shown provide experiences with trading and grouping.

FREQUENTLY ASKED QUESTIONS ABOUT UNIT 4

Q: Why is the number line used in kindergarten?

A: The number line helps students read numbers in a counting sequence and to connect number words with written numerals when they count both forward and backward. It also helps them see relationships between numbers. For example, a child can see that 1 is right next to 2 but 10 is much farther away. When he sees the spatial difference between 2 and 5 on a number line, it is easier for him to understand the difference between 2 and 5. Research has shown that this understanding helps the child develop an internal or mental number line, which enhances his overall number sense and helps him compute more fluently.

Q: How can I help my child have a better understanding of one more and one fewer of an amount?

A: Provide your child with opportunities to count such objects at home as small toys, pennies, or snack items like grapes or crackers. Then ask her, "What if I gave you one more? How many would you have?" or "What if I took one away? How many would you have?" Encourage your child to think of these answers by asking what number comes before or after a number when counting. For example, if she counts five fish crackers and you take one away, ask your child what number comes before 5 when counting. Invite her to count to check her answer. By doing so, you are helping your child make connections between counting and computing. When she is confident with one more and one fewer, expand the idea to two more and two less than a given number.

Q: Are kindergarteners expected to count money?

A: Children show interest in money at an early age, but because counting money and making change are complex skills, mastery is not expected until the end of second grade. Students must first learn to identify the names and values of coins. Next, they must recognize that money comes in different sizes and colors and learn to use these features to tell one coin from another. Then they learn that counting cents is different from counting the number of coins (for example, one nickel is worth five cents). The Bridges curriculum introduces money in kindergarten as a meaningful reason to count by and add and subtract with 1s, 5s, and 10s using groups. Bridges provides repeated exposure and practice throughout kindergarten, first, and second grades, allowing students the time needed to develop these lifelong, real-world skills.

A nickel is equal to 5 pennies.
A nickel is worth the same amount as 5 pennies.