InsightMath California

Exploring Numbers

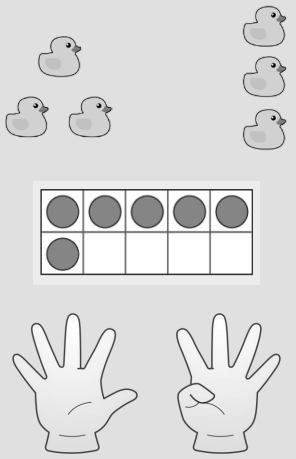
Family Guide | Grade K | Unit 2

Your student is exploring how a number represents a fixed quantity, with each being one more than the previous number in the count sequence.

Key Math Ideas

Conservation of number is the concept that no matter how a group of items is arranged or what order they are counted in, there will always be the same quantity. Students who are still developing this concept will often count objects by rote, say the total, and count them again when asked "How many?" because they're not yet connecting the act of counting with an enduring concept of how many are in the group.

In Unit 1, students learned to **perceptually subitize** or "just see" quantities like 1, 2, and 3 loose items and recognize familiar dice patterns without having to count. In Unit 2, students begin to **conceptually subitize**, noticing that if we recognize 5, we can see 5 and 1 more as 6. If we recognize 10, we can recognize 1 fewer than 10 as 9.



→ In the first part of the unit, your student will learn to

- explain that rearranging objects doesn't change how many there are;
- use structured arrangements like ten frames to compare quantities.

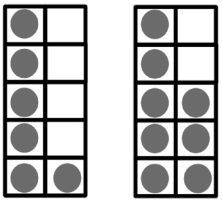
→ In the middle of the unit, your student will learn to

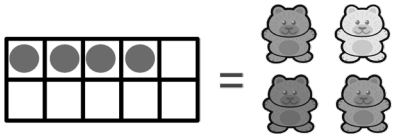
- understand the concept of 0;
- understand that equal means "the same value on both sides;"
- count out up to 10 objects ("Can you give me 8 pencils?");
- make a plan to count pictures of scattered objects, such as by marking each one as it is counted;
- count forward to numbers up to 20 and backward from 10 to 0;
- write numerals from 0 to 10.

→ In the last part of the unit, your student will learn to

- compare two numerals up to 10 using the counting sequence;
- subitize 6 as 5 and one more and subitize 9 as one fewer than 10.

Which ten frame has fewer dots? How do you know?



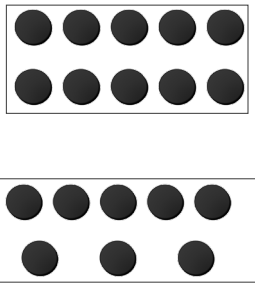


1	2	3	4	5	6	7	8	9	10

Which is greater, 8 or 6?
Use the number path to compare.

Helpful Hint

Kindergarteners may see two equally-spaced rows that each have 5 coins and agree that they are equal, but when they watch someone spread out one of the rows, they will say that the wider-spaced row has more coins. Practice counting a group of objects, reinforcing the total number, then moving them around and asking how many. If students don't automatically know that the quantity is the same, reinforce that you haven't taken any objects away or put more down, so the same objects are still there and the quantity must be the same (conservation of number).



Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ In the first half of the unit:

- In the first part of the unit:
- How many things? How many are there after I move them?
- Which group has more things? How could we make them easier to compare?

→ In the middle of the unit:

- Can you give me __ things?
- How can we count these pictures without counting any twice or skipping any?
- What numbers do you see around us? Can you show me an equal number with your fingers?

→ In the last part of the unit:

- Which number is greater, __ or __?

If...	Try...
your student is skipping or double-counting items when counting scattered objects . . .	making a plan first, such as counting in rows or around in a circle, covering up items that have been counted, or using a pencil to mark items while saying each number.

Student Strengths Spotlight

We take time to think. Students notice that rushing can lead to counting and comparing errors, and that the goal of mathematics is to be thoughtful rather than fast.

We try our best. Students learn that mistakes are an opportunity for learning, and that even when we make a mistake, we can try again.

Try This Together!

- **Comparison Challenge.** Provide two groups of up to 10 small objects (pennies and nickels, O-shaped cereal and raisins, etc.) and ask "Which group has more? Which has fewer?" Explore different ways to compare, such as matching in pairs, matching one to each finger on your hands, putting them in rows of five to make ten frames, or counting both groups and using the number sequence.
- **Counting Everywhere!** Count objects around you, noticing when you can use efficient strategies. Count shoes on a rack by going left to right and top to bottom. Count crayons while we put each one away in the box. Count balloons on a birthday card by making a small pencil mark on each one. Don't forget to ask about zero! ("How many grapes are left in this bowl?" "Zero!")
- **Count and Move.** Choose a number up to 20 and count that number of exercises. Do 17 jumping jacks. Touch your toes 12 times. Count backward from 10 by crouching down until you reach 0, then blast off like a rocket!
- **More, Fewer, Equal.** Show your student a group of small objects (beans, toy cars, etc.) and challenge them to make an amount with more, fewer, or an equal number and explain how they knew. Take turns and let your student quiz you.
- **Fast Fingers.** Hold up some fingers while your student guesses how many there are, then switch roles. Emphasize that 5 and 1 more is 6, and that 9 is 1 fewer than 10. Next, say a number from 1 to 6, or 9 or 10, and challenge the other person show it on their fingers.