1-digit Number Recognition and Decomposition
Bar Models

Standard: Kindergarten Number Sense 1.2 Count, recognize, represent, name, and order a number of objects up to 30.

Objective: Students translate numbers built with linking cubes to bar models.
Students write equations based on bar models.

Materials: 2 different colored sets of 10 teddy bear counters per student (20 teddy bear counters per student or group students so they share a set of 20).
2 different colored sets of 10 linking cubes (towers) per student (20 linking cubes per student or groups students so they share a set of 20).
Paper and pencils.

Introduction: Today we are going to show how we can draw numbers using bar models.

We have built numbers using linking cubes, teddy bear counters, and other materials. Let's review how to build number using teddy bear counters.
(Go over classroom norms for using manipulatives. Pass out teddy bear counters.)

Watch me as I build the number 5 with my teddy bear counters.

Build 5 using teddy bear counters (3 red and 2 yellow).

Count with me to check that that I have 5 teddy bear counters. 1, 2, 3, 4, 5.

Did anyone notice how I made my 5 using the teddy bear counters?

Yes, I counted 3 red teddy bear counters and 2 yellow teddy bear counters. I have 5 teddy bear counters all together.

I want to do the same with linking cubes. I want to make 5 with linking cubes like I made 5 with teddy bear counters. How many red linking cubes do I need? How many yellow linking cubes do I need?

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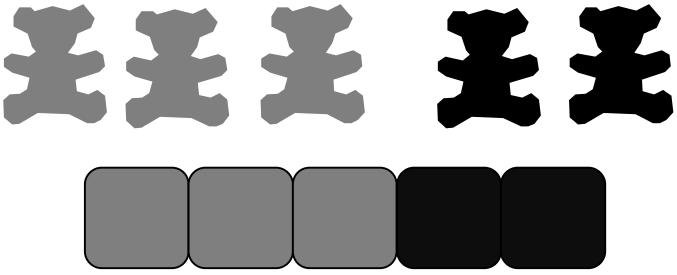
Build 5 using linking cubes (3 red and 2 yellow).
Count with me to check that that I have 5 linking cubes. 1, 2, 3, 4, 5.

How did I make 5 the same way with the linking cubes as I did with the teddy bear counters?

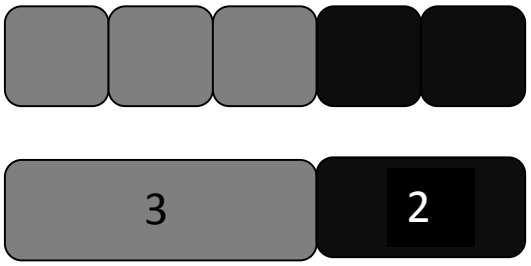
Yes, I used 3 red linking cubes and 2 yellow linking cubes to make 5 just like I used 3 red teddy bear counters and 2 yellow teddy bear counters to make 5.



Now I want to draw my linker cubes. I will draw 3 red linking cubes and 2 yellow linking cubes.

Draw 3 red linking cubes and 2 yellow linking cubes on the board.

I am going to connect the 3 red linking cubes together into 1 rectangle that is the same value. I will draw that rectangle below the 3 linking cubes. I will write a 3 in the rectangle to show that it has the same value as the 3 linking cubes. I am going to connect the 2 yellow linking cubes together into 1 rectangle that is the same value. I will draw that rectangle below the 2 linking cubes. I will write a 2 in the rectangle to show that it has the same value as the 2 linking cubes.



We have just drawn a bar model for the number 5.

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Continue modeling this process with the number 5 making all variations of the number (5 and 0, 4 and 1). Other numbers can be explored using more linking cubes and teddy bear counters.

Now you will do this activity with your partner. Partner 1 will show teddy bears in combinations to show a number, and partner 2 will draw a bar model that represents the teddy bear counters. (Start with numbers 1-3, then increase as students are ready.)

Formative Assessment – As you walk the room note students who are succeeding and those who are struggling. Make note of bar models are easiest for students to make and those that are more difficult. Ask thinking questions like, "You made 3 with a bar of 3, what's another way you can make 3 with the bar model?"

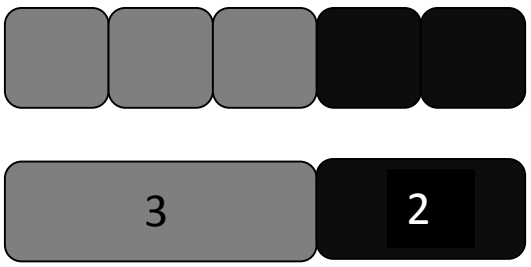
Closing:

What did you and your partner notice when you were doing this activity together?
What helped you to know how to make the bar model?

Students should be allowed to try these activities as you guide them through the process step by step.

As they become familiar with the process have them work independently, creating bar models for other numbers.

An extension would be to add an equation to the bar model.



$$3 + 2 = 5$$