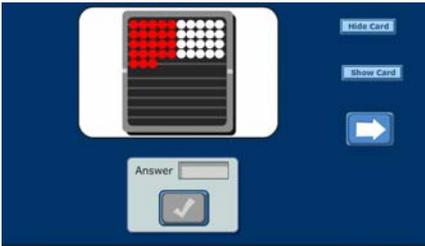


## Numbers to One Hundred on the Math Rack

The interactive white board tool for this lesson can be found on our website under Resources and Teacher Tools. ([www.dreambox.com/teachertools](http://www.dreambox.com/teachertools))



Virtual manipulatives are a powerful way to engage students in mathematical thinking while offering them opportunities to develop strategies and model their thinking. Even when students aren't manipulating the tools, their representation can be used to engage students in critical thinking. DreamBox's MathRack QuickImages are designed to ensure students look for and make use of the five- and ten-structures, and develop automaticity with basic facts and relationships.

### Sample Lesson

**Objective:** Students use multiple strategies to determine the number of beads on the MathRack without counting each individual bead. This lesson requires that students look for mathematical structure and use it to subitize (strategy of seeing a group as a unit without counting) large quantities and communicate their thinking.

### Instruction:

1. Choose a student to click the "Show Card" button to display the MathRack card. Invite all students to "look carefully and tell us how many beads you see."
2. After the card flips back to the blank side, ask students to share what they saw and how many total beads – both red and white – are on the card. "What did you see? Turn to your neighbor and share what you think."
3. After a few moments of these paired discussions, start the whole group discussion.
4. Call on a student to explain what they saw and how they figured it out.  
**Possible responses:**
  - a) I saw a group of 50, four more rows of 10 and a row of 9. (Student may have difficulty coming up with the total.)
  - b) I saw 9 rows of ten plus a row of 9 to make 99.
  - c) 99, I didn't have to count because I knew there are a hundred on the rack and the last row only had one missing.
5. The student who answers moves up to the white board and clicks "show card" and uses the picture to illustrate her strategy. That student types the answer in the window and clicks the "next" button.

6. Repeat the sequence above for more cards, giving multiple children the opportunity to share their responses and strategies. If students are unable to subitize the number of beads during the brief “flip” of the card, the teacher may need to click “Show Card” and give students the opportunity to look for ways to count the beads in groups. Remember the purpose of the Quick Images are for students to actively look for and use the structure to better understand the base 10 system. Be sure each student has the opportunity to “look” on their own.