Bead Rack Instructional Sequence

Objective: to help students reason about numbers and not count by 1s; talk with students when using the bead rack to discover their thinking.

Making and Reading numbers from 1-20

In the range of 1-5
Students build numbers (*can you show me 4 with only one push?)*
Students build numbers without counting.
Students say numbers that are "flashed" on bead rack by teacher *(show student some beads, then cover and ask "how many beads am I hiding?)*

In the range of 1-10
Students build numbers (*can you show me 7 with only one push?)*
Students build numbers without counting.
Students say numbers that are "flashed" on bead rack by teacher *(show student some beads, then cover and ask "how many beads am I hiding?)*

In the range of 1-20
Students build numbers (*can you show me 15 with only two pushes?)*
Students build numbers without counting.
Students say numbers that are "flashed" on bead rack by teacher *(show student some beads, then cover and ask "how many beads am I hiding?)*

Adding Numbers in the Range of 1-10

Both addends in the range of 1-10

- Small doubles (1+1 to 5+5)
- 5+ sums (5+1, 5+2, etc.)
- All combinations in range of 1-5
- Big doubles (6+6 to 10+10)
- 10+ (10+1, 10+2, etc.)
- All combinations in range of 1-10

Be sure to allow for flexibility and encourage students to find sums in a variety of ways!

Adding and Subtracting in the Range of 1-20

Pose these tasks either verbally or horizontally.

- Addition with 1 addend less than 10
  - 12+5, 18+2
- Missing addends
  - 12+?=17, 15=?+8
- Taking away
  - "What is 17 take away 5?" "What is 7 less than 14?"
- Missing subtrahend
  - 17-?=10
- Differences
  - "What is the difference between 12 and 17?"
- Partitions
  - "What are 2 numbers that add up to 14?"

Transitioning to Written Computation

Students use the bead rack to solve computation problems.

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Students partially use the bead rack; the first number is shown on the bead rack and a numeral is used to show the second number of a computational problem.

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Students solves a computational problem mentally and use bead rack to check or to explain their thinking.

Wright, R.J., Ellemor-Collins, D, & Tabor, P. (2012). Developing Number Knowledge. London, UK: Sage Publishing