

Number vs. Numeral: Developing the Concept of Quantity

Choosing a Unit to Compare Quantities

- **Determine the Attribute Activity:** Select a picture of two differently sized items or use realia. Ask students either: Which is greater? or Which is less? Students must justify their responses by explaining which attribute they used to make their comparison.
- **Determine Unit Activity:** Select a picture of discrete items that could be counted as individual items or pairs of items. You can also use realia. Ask students: Are the two collections equal? Students must justify their responses by explaining how they interpreted the unit (individual items or pairs of items).
- **Comparison Statements Activity 1:** Show two collections of items along with a comparison statement: Group A is equal to/greater than/less than Group B. Students must determine the unit you used to make the comparison statement and justify why that unit makes the statement true.
- **Comparison Statements Activity 2:** Students create their own two collections of items and write the corresponding comparison statement (either in partners, groups or individually). They must explain the unit they used to make the statement and justify why the statement is true. As an extension, you might have students "swap" their collections and comparison statements with a partner or group to determine the unit that makes the statement true.

All of the above activities are based on ideas from *Developing Essential Understanding of Number & Numeration (PreK-Grade 2)* by B. J. Dougherty, A. Flores, E. Louis, & C. Sophian, NCTM (2010)

Meaningful Counting

- **Counting Collections:** You may choose to allow students to gather their own collection of items or you may choose to provide them with a collection. Students should organize the items using numbers they are comfortable with, which allows them to count accurately. Make organizing tools like five frames, ten frames, cups, bowls, egg cartons, etc. available for students to use while they count. Ask students to record how they are counting and explain their thinking. The goal is to move students beyond counting by 1s...Counting by 2s, 5s, and 10s are different ways to group items and count. You can differentiate this activity by providing students with different sized collections to meet their needs.

From "Counting Collections" by J. Kern Schwerdtfeger & A. Chan in *Teaching Children Mathematics*, March 2007, p.356-361.