Math Background

Picture Graphs

Comparing Quantities  The earliest picture graphs in Unit 6 contain only two rows of symbols. Children are asked to make the two quantities equal. This approach helps them to see the difference. It also helps them develop the double focus that is necessary for drawing comparisons: the first amount is \( x \) units more than the second, and the second amount is \( x \) units fewer than the first.

When children proceed to picture graphs with three or four rows, another set of skills comes into play. Here children are asked to find the greatest or least quantity on the graph as they learn to make general comparisons rather than restricted comparisons. They are also selecting relevant information—another valuable skill.

![Picture Graph Example](image)

Story Problems with Comparisons

Daniel has 6 apples. Abby has 4 apples. 

How many more apples does Daniel have than Abby?

The language of comparing and equalizing can be particularly troublesome for young children. The question in a problem such as the one above actually requires three questions to be answered: How many apples does Daniel have? How many apples does Abby have? What is the difference? The use of picture graphs and Stair Steps helps children focus on each of these questions one at a time. Children can also make math drawings and match Daniel’s apples to Abby’s apples.

Measurement

In conjunction with comparison and equalizing story problems, children are introduced to simple measurement increments involving drawings of inch rulers. At this point, they are not expected to position the ruler themselves, only to observe the results. These measurement calibrations provide them with another context for exploring comparisons.

![Inch Ruler Example](image)

Daily Routines  Use three routines (Money Routine, Calendar Routine: Using Ordinal Numbers, and Number Comparisons) with Unit 6. The Daily Routines are an important part of the children’s daily learning. You can do the routines at the beginning of the day or at any regular time during the day. The description of all of the Daily Routines begins on page xxiii of the Introduction.