

## Choosing Categories

Many kindergarten classrooms use graphs as a way of collecting information about students. Familiar subjects for graphs include these:

- How old are you?
- What kind of pet do you have?
- What's your favorite color?
- How many people are in your family?

These questions represent two types of information to be collected: *categorical* data, or data that can be sorted according to attributes; and *numerical* data, or data that can be ordered in a particular way. The pet and favorite color questions will yield categorical data, whereas the number of people in a family and students' ages are numerical data.

In the activity *What Did You Eat for Lunch?* students collect categorical data about the favorite part of lunch for everyone in the class. They are then asked to think about the different ways these foods can be grouped. Students decide on categories that make sense to them based on the real data they have collected. Because a permanent representation of the data is not made until the end of the activity, students are able to try out different ways of sorting their favorite lunch foods.

The choosing of categories by the students themselves is a key element in representing categorical data. Too often in the primary classroom, data collection and representation are tied to predetermined categories. The categories are defined, usually by the teacher, before the data are collected, and students are limited to a few choices. While this simplifies the task, it also precludes the richness and diversity that can result when students have the chance to consider how and why certain data go together. For example, in the **Dialogue Box**, *But My Peach Was Sweet* (p. 55), one kindergartner makes a distinction between *sweet* desserts (cookies, brownies) and *fruit* desserts (apples, grapes). While this organization is clear and understandable to that student, it is confusing to a classmate who points out that his peach was also sweet.

Involving students in making decisions about how things go together brings them into some of the most important aspects of data collection. While we as teachers may want to define categories in order to make a task easier to understand, what is understandable to us may be puzzling to someone else. Only through sorting the actual data they have collected can students arrive at categories that have meaning for them. In the process, even the youngest students encounter an important idea in data analysis: that different ways of organizing data make different aspects of the data more obvious and salient. When students are allowed and encouraged to be involved in all aspects of data collection and analysis, the process becomes a rich, active experience rather than a passive exercise of responding to a predetermined graph.