Chapter 10 Application Guide

Use the application guide to connect these ideas and tools to your classroom practices.

Chapter 10 Topics	Connect to Your Classroom
Teaching measurement conceptually	Use real-world scenarios that speak to students' interests and experiences. Incorporate estimation and benchmarks. Allow students to choose measurement units to support number sense and reasonableness.
Using manipulatives and tools	Ensure students are active, not passive, during measurement tasks with hands-on materials and manipulatives. For K–2 students using nonstandard units, try color tiles, inch cubes, and open materials like cotton balls and craft sticks. For students in grades 3–5 using standard units, offer rulers, yard sticks, measuring cups, thermometers, clocks, and other tools. A pan balance allows for weight comparisons of either standard or nonstandard units.
Teaching measurement vocabulary	Offer resources like a student-friendly math dictionary to empower students with mathematical terms that articulate their ideas with clarity and accuracy. Set up a math word wall and use activities like Mind Reader and Flyswatter to regularly review terms.
Supporting estimation	Activate number sense by having students estimate before and during measurement tasks. Since students' initial estimates are often based on whimsy, not reasoning, have students revisit and revise their estimates about halfway through the measurement process.
Teaching data analysis conceptually	Give students experience asking questions, questioning inferences drawn from incomplete or biased data, gathering data, analyzing data, and interpreting results—all within a context they care about—to ensure they are prepared to apply data analysis skills in the future.
Choosing the appropriate graph	Help students understand that the type of data collected determines the graph they use. Categorical data is words (for example, favorite pets) and can be represented with picture graphs or bar graphs. Numerical data is numbers or measurements (for example, heights of students) and can be represented with a frequency table, circle graph, dot plot, stem-and-leaf plot, line graph, scatter plot, or histogram.