Chapter 2 Project Teacher Notes: The Big Dig!

About the Project

The project gives students an opportunity to explore the mathematical connection between height and lengths of bones in the human body. The activities will help students understand how to measure and display data.

Introducing the Project

- Ask students to work with partners or in small groups. Students will need to know that the tibia is the inner and thicker of the two bones between the knee and the ankle, the humerus extends from the shoulder to the elbow, and the radius connects the wrist to the elbow.
- Discuss what tools and/or methods are available for measuring. Determine which would be best for this project and why. Discuss and evaluate ways to organize and display the data. Suggest that students create spreadsheets for calculating and displaying their information.

Activity 1: Graphing

Students list the lengths of the radius bones of all students and graph the data.

Activity 2: Calculating

Students calculate their own heights using the given formulas. Then they make suppositions about an archaeological find.

Activity 3: Analyzing

Students organize the data from Activity 1 by gender, then display the data to compare heights of males and females.

Activity 4: Creating

Students measure the tibia, humerus, and radius bones, and the heights of several adults. They organize their data on spreadsheets. Using the formulas from Activity 2, they predict heights and compare predictions with measured heights.

Finishing the Project

You may wish to plan a project day on which students share their completed projects. Encourage groups to explain their processes as well as their results. Have students review their project work and update their folders.

- Have students review their methods for finding, recording, and displaying the data they needed for the project.
- Ask groups to share insights that resulted from completing the project, such as any shortcuts they found for creating graphs and spreadsheets. Also, ask if any mathematical ideas have become more obvious, and whether there are areas about which they would like to learn more.