A Teacher's Journal

Where Did You Go This Summer?

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Twenty-five Ferndale School District students in a second- and third-grade combination classroom were asked several questions during the mathematics problem-solving lesson in the first week of school: "Where did you go this summer? How far did you travel? Who traveled the farthest?" Their interest was immediately piqued. Each student was given a 3×5 index card and told to list the places that he or she had gone that summer and to "guesstimate" the distances from Ferndale, Washington, to these destinations. The students displayed creative thinking about the task by immediately starting to print information on their cards.

Then, actual distances between Ferndale and the places visited had to be determined. Through persistence and with a little luck, the teachers found a Web site, www.indo.com/distance/, that gives distances in miles "as the crow flies" from Ferndale to anywhere in the world.

The terms *round trip* and *as the crow flies* were explained, and the students were invited to determine their round-trip mileage through whatever means they could. To determine who had traveled the farthest, each student wrote his or her round-trip distance and place name on a sheet of paper. Students were randomly called to come to the front of the class. Each student read the destination traveled from Ferndale, along with the round-trip mileage, and displayed the information on the sheet of paper.

After each student presented his or her information, the class had to decide where the round-trip distance in miles should be placed on an ordered line that started with the shortest distance traveled. Once the correct placement was determined, the student would stand or kneel, depending on available space, in that spot on the line, continuing to display his or her travel information sheet. When all the students were in line, the student who traveled the farthest distance would be standing or kneeling at one end of the line and the student who traveled the shortest distance would be at the other end of the line. Through this process, the students learned about place value and the concepts *greater than*, *less than*, and *between* (see **fig. 1**).

An extension of this unit, using the students' destinations and the previously determined mileage, provided further practice with place value, as well as reading and listening skills. The teachers prepared one 5×8 index card for each student, listing a destination from Ferndale and the one-way mileage, such as "Ferndale to Mexico City, Mexico, 2409 miles." The cards also listed a second destination from Ferndale with the one-way mileage omitted, such as "Ferndale to Seattle, Washington, _?_ miles." The cards were arranged in sequence by the teachers and distributed randomly to the students. The teachers had the student with the first destination in the prepared sequence stand and read the information on the card. Following from this example, the next student to stand and read his or her card would have the miles listed for Ferndale to Seattle, Washington, as the first destination, along with a second destination with the mileage omitted. This process continued until the students read all the cards. To ensure that the sequence would not involve duplicate destinations, additional well-known cities (places not visited by the students) were included as destinations from Ferndale. Arranging the sequence in advance also enabled the teachers to conclude the sequence with

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FIGURE 1

Students explore *greater than, less than,* and *between* as they form their human number line.

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a surprise destination: Ferndale to the moon, _?_ miles.

Students responded positively to this unit, which served as an "icebreaker" at the beginning of the year. These activities gave students opportunities to learn about one another through their summer travels and adventures. As Banner and Cannon (1997, p. 41) state, "What students bring to the classroom of their own experiences and of their families' lives and situations is the raw material that teaching seeks to enlarge and deepen." Additional support for using students' personal experiences to enhance mathematics instruction, termed *context learning*, is offered by De Corte (1995) under the topic "Realistic Mathematics Education."

This problem-solving mathematics activity also provided a bridge between summer events and school-related tasks, placing the students in a ready-to-learn mode. In addition to the geography lesson, students learned new vocabulary and reviewed previously learned vocabulary, including *estimation, greater than, less than, round trip, doubling, ordering, place value, between-ness, number sense,* and *numeration*. The skills used included estimating, working with place value and numeration, multiplying, adding, reading, comparing, and contrasting.

Extensions of this unit could involve using road maps with mileage listed. Students could be asked to determine the shortest route from one city to another. A frequency distribution graph constructed by the class could display the most popular destinations in cities, states, or regions.

This problem-solving unit, which requires higher-level thinking skills, is just one of many such activities presented to third-grade students over the past three years through a collaborative effort by a school psychologist and an elementary education teacher. A one-hour block of time per week has been devoted to enhancing the students' problem-solving skills, which are reinforced throughout the week by the teacher. The goal of this collaboration is to create a new generation of learners who do not fear mathematics and are better able to make connections and see that solving problems can be an exciting and rewarding experience. Students also realize that mathematics is not solely a paper-and-pencil activity, that problems can be solved in many ways, and that all the students' ideas are valuable.

References

Banner, James M., Jr., and Harold C. Cannon. *The Elements of Teaching*. New Haven, Conn., and London: Yale University Press, 1997.

De Corte, Erik. "Fostering Cognitive Growth: A Perspective from Research on Mathematics Learning and Instruction." *Educational Psychologist* 30 (winter 1995): 37–46. ▲