

A TEACHER REFLECTS



Making Scale Drawings

I chose several items outside the school building that I thought would make for interesting scale drawings.

These included a flagpole, a tall pine tree, a streetlight, and a statue in a park across the street. Before beginning, I asked the class if they could suggest convenient and accurate ways to measure a distance of 20 m from the base of these objects.

Luis suggested placing a meterstick at the base of each object and marking the ground at the end of the stick with chalk. Then the meterstick could be moved out 1 m and the endpoint could be marked again. This would have to be done 20 times for each object. The class felt that this method would be accurate, but time consuming.

Keisha suggested we find a way to pace off the distances, and everyone felt that this would be a good method. Several students were chosen as “pacers,” and we began by determining the number of paces it took for each student to walk 20 m. To do this, I had each student walk 20 m three times and asked the class to take an average.

This gave us the average number of paces for 20 m. From that point, it was easy to use the pacers to help locate the appropriate distances from the base of each object.

I had students working in groups of four. Two students were responsible for using and reading the Slope-o-meter, one student was the pacer, and one student was responsible for recording the data. I asked the class to go back inside to do the scale drawings and calculations.

As I circulated among the groups, the most common error I saw was neglecting to include the height of the Slope-o-meter above the ground. I chose to let students discover this for themselves.

Alexis asked whether the triangle in the scale drawing should be “on the ground” or “up in the air.” This led many students to realize the importance of accounting for eye-level height. At this point, they used a meterstick or measuring tape to measure the height of their classmates’ eyes above the ground.

