

A TEACHER REFLECTS



By the last phase of this unit, students were feeling very confident in their ability to explore and learn on their own. Most of them had not had a lot of experience working with two-dimensional shapes, and they were proud of what they had learned rather quickly about a new topic. Doing Lesson 11, watching them work together and seeing how freely they explored and expressed their ideas, I realized how far they had come. Now, however, many students freely expressed their own ideas, with less concern over being right or whether they were the only one who had done something a certain way than had been shown earlier. Ironically, it was during this lesson that I was concerned about the time we were taking on this topic and feeling that we needed to move on.

When we started estimating the area of our circles, students came up with many strategies. Some divided their circle in fourths, some outlined all the whole squares, some wrote numbers in the squares, and so on. We took all these estimates and made a large chart from them. Students then studied the estimates in pairs, comparing them, looking for patterns, and making predictions for bigger circles. A few pairs also tried to come up with a formula at this point. Radius \times 20 was suggested, and then another pair found that radius \times 19.6 would be even closer. During other lessons, I had encouraged students to pursue areas that interested them and taken extra class days to delve deeper into topics such as

tessellations when there was a lot of interest, and I felt there was a lot of math to be learned. Now students wanted to try out the formulas that various students had written on larger circles. Despite my pleasure and pride in their progress, I decided not to pursue this, however, since I felt at this point we had to finish the unit and move on. Several students mentioned this decision to me or brought it up in their writing, and I think I put a damper on an exploratory spirit and excitement about math that was just developing.

In any case, we moved on to forming our circles into wedges and making rectangles. I found it interesting that some students thought that eventually by cutting smaller and smaller wedges, they could make a perfect rectangle. We were able to discuss “for all practical purposes” versus “theoretically.” Students had a hard time coming up with the formula, but once they had it they went back to the class chart and compared the actual area to the earlier estimates. Many were proud of how close their estimates were.