

Writers' Workshop

Just How Dense Can They Be?

In this Writers' Workshop you will:

- Determine whether a crowd of people is loosely packed, closely packed or very densely packed.
- Use density and area to estimate the number of people in a crowd.

Just How Dense Can They Be?

If all large groups of people would sit down and stay put, it would be easier to count them. But marching, dancing, hurrying or struggling people are unlikely to hold still for you.

Police, event organizers, opponents of the gathering and owners of the venue may have wildly different estimates of the crowd. Of course you can report the varying estimates. *Police estimate fewer than 400 people attended the protest, while organizers claim over 1,000 assembled before the county courthouse.* This does not provide your audience, even those watching aerial footage of the event, with a satisfactory figure.

Mini-Lesson: Determining the Density of a Crowd

In the 1960s, journalism professor Herbert Jacobs of the University of California, Berkeley counted protesting students in a plaza far below his office window. The plaza was divided into neat squares by grid lines, so he was able to count how many students were in each grid. Many observations gave him these valuable numbers:

- In a *loose* crowd, where each person is one arm's length from the body of his nearest neighbor, each person takes up 10 square feet.
- In a *closely packed* crowd, each person needs 4.5 square feet.
- In a *very densely packed* crowd with body packed against body, each person gets about 2.5 square feet.

Apply It!

1. Examine photos of large gatherings from your own school and from the professional media. Decide which photos show a loosely packed crowd, which show a closely packed crowd and which show very densely packed people.
2. With several others, examine pictures taken on

your campus or in your community and choose three to serve as benchmarks for loosely, closely and very densely packed crowds.

Mini-Lesson: Estimating Crowds by Density and Area

You now know how to use crowd density to determine the amount of space each person in the crowd occupies, but how can you use that figure to estimate the total number of people in the crowd? For that, you need one other piece of information: the area the entire crowd occupies. If the space is rectangular, the area is calculated by multiplying width times length.

Apply It!

Follow these steps to estimate the number of people in an enclosed space where students gather or walk, such as a narrow hallway, stairwell or in front of the stadium entry.

1. Measure two adjacent sides of the location.
2. Multiply the two numbers to get the area. For example, if a hallway is 8 feet wide and 20 feet long, then the area is 160 square feet.
3. Decide how close people are to each other: loosely packed, closely packed or very densely packed.
4. Divide the area by 10 for a loosely packed crowd. Divide by 4.5 for a closely packed crowd. If people are crammed against each other, divide by 2.5.
5. Check your estimates with those of other students, with a photograph or with another student who was attempting to count the people. How accurate were you?
6. Write a description of the crowd. If students with their backpacks and athletic bags crammed into the entry of the library to avoid rain and if the area measured 20 feet by 15 feet, you could divide 300 square feet by 4.5 and write, *Nearly 70 students huddled and dripped in the library foyer as they waited hopefully for rides home through the torrent.*